

If you plan to submit a bid directly to the Department of Transportation

PREQUALIFICATION

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later than 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

REQUESTS FOR AUTHORIZATION TO BID

Contractors downloading and/or ordering CD-ROM's and are wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124INT) and the ORIGINAL, signed and notarized, "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

WHO CAN BID ?

Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status" (BDE 124INT) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial.

ABOUT AUTHORIZATION TO BID: Firms that have not received an authorization form within a reasonable time of complete and correct original document submittal should contact the department as to status. This is critical in the week before the letting. These documents must be received three days before the letting date. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions.

ADDENDA: It is the contractor's responsibility to determine which, if any, addenda pertain to any project they may be bidding. Failure to incorporate all relevant addenda may cause the bid to be declared unacceptable.

Each addendum will be placed with the contract number. Addenda will also be placed on the Addendum/Revision Checksheet and each subscription service subscriber will be notified by e-mail of each addendum issued.

The Internet is the Department's primary way of doing business. The subscription server e-mails are an added courtesy the Department provides. It is suggested that bidder check IDOT's website <http://www.dot.il.gov/desenv/delett.html> before submitting final bid information.

IDOT is not responsible for any e-mail related failures.

Addenda Questions may be directed to the Contracts Office at (217)-782-7806 or D&Econtracts@dot.il.gov

Technical Questions about downloading these files may be directed to Roseanne Nance (217)-785-5875 or nancer@dot.il.gov

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	Call
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of plans and proposals	217/782-7806
Electronic plans and proposals	217/785-5875

ADDENDUMS TO THE PROPOSAL FORMS

Planholders should verify that they have received and incorporated the revisions prior to submitting their bid. Failure by the bidder to include an addendum could result in a bid being rejected as irregular.

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RETURN WITH BID

Proposal Submitted By
Name
Address
City

Letting January 21, 2005

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

NOTICE TO PROSPECTIVE BIDDERS

This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.

(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

Notice To Bidders, Specifications, Proposal, Contract and Contract Bond



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. 62803
COOK County
Section 2004-064TS
Route FAI 90/94
Project IM-943(374)57
District 1 Construction Funds**

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included

Prepared by

F

Checked by

(Printed by authority of the State of Illinois)

INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

WHO CAN BID?: Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction. To request authorization, a potential bidder must complete and submit Part B of the Request for Authorization to Bid/or Not For Bid Status form (BDE 124 INT) and submit an original Affidavit of Availability (BC 57).

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans" he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form**, they should contact the Central Bureau of Construction in advance of the letting date.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

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Questions Regarding	Call
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of CD-ROMS	217/782-7806

RETURN WITH BID



PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

for the improvement identified and advertised for bids in the Invitation for Bids as:

**Contract No. 62803
COOK County
Section 2004-064TS
Project IM-943(374)57
Route FAI 90/94
District 1 Construction Funds**

Traffic signal modernization and street lighting along I-90/94 at 51st Street between South Wentworth Avenue and South Wells Street in Chicago.

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents shall govern performance and payments.

RETURN WITH BID

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

<u>Amount of Bid</u>		<u>Proposal Guaranty</u>		<u>Amount of Bid</u>		<u>Proposal Guaranty</u>	
Up to	\$5,000	\$150		\$2,000,000	to	\$3,000,000	\$100,000
\$5,000	to \$10,000	\$300		\$3,000,000	to	\$5,000,000	\$150,000
\$10,000	to \$50,000	\$1,000		\$5,000,000	to	\$7,500,000	\$250,000
\$50,000	to \$100,000	\$3,000		\$7,500,000	to	\$10,000,000	\$400,000
\$100,000	to \$150,000	\$5,000		\$10,000,000	to	\$15,000,000	\$500,000
\$150,000	to \$250,000	\$7,500		\$15,000,000	to	\$20,000,000	\$600,000
\$250,000	to \$500,000	\$12,500		\$20,000,000	to	\$25,000,000	\$700,000
\$500,000	to \$1,000,000	\$25,000		\$25,000,000	to	\$30,000,000	\$800,000
\$1,000,000	to \$1,500,000	\$50,000		\$30,000,000	to	\$35,000,000	\$900,000
\$1,500,000	to \$2,000,000	\$75,000		over		\$35,000,000	\$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ \$(_____). If this proposal is accepted and the undersigned shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

Attach Cashier's Check or Certified Check Here

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for:

Item _____

Section No. _____

County _____

Mark the proposal cover sheet as to the type of proposal guaranty submitted.

BD 354 (Rev. 11/2001)

RETURN WITH BID

6. **COMBINATION BIDS.** The undersigned further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual proposal comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid	
		Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices shall govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.
8. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 62803

State Job # - C-91-288-04
 PPS NBR - 1-74823-1210
 County Name - COOK- -
 Code - 31 - -
 District - 1 - -
 Section Number - 2004-064TS

Project Number
 IM-094-3/374/057

Route
 FAI 90/94

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
XX004684	REP&REPL DAMAGED COND	FOOT	60.000				
X0320080	ROD & CL DUCT EX COND	FOOT	586.000				
X0322256	TEMP INFO SIGNING	SQ FT	102.800				
X0322689	P S AB 10 7G 34'-6"	EACH	1.000				
X0324225	CONTR TRAF 16LB P CAB	EACH	2.000				
X0324354	TR & BKFIL W SCRNSND	FOOT	6.000				
X0324412	C F 24D 1.25AR 15BC	FOOT	9.000				
X0324421	RACK CABLE IN MAN/HH	EACH	9.000				
X0324435	CLEAN EX MAN/HAND	EACH	9.000				
X0324648	INNERDUCT CON 1-1/4	FOOT	610.000				
X0324649	CAB WK SPLIC/TEST/MIS	EACH	2.000				
X0324650	STAR MODEM	EACH	1.000				
X0324651	FO HYB CABLE 6SM/6MM	EACH	670.000				
X0324652	TRACER CABLE	FOOT	610.000				
X0324842	RELOC EX LUM/MAST ARM	EACH	1.000				

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 Section Number - 2004-064TS

Project Number
 IM-094-3/374/057

Route
 FAI 90/94

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0324843	REL EX ILLUM SN,TS,PED	L SUM	1.000				
X0329863	INTERCEPT EX CONDUIT	EACH	1.000				
X0935700	ELCBL C 12 19C	FOOT	140.000				
X0962500	REMOV EX TS EQUIP	L SUM	1.000				
X0966700	JUNC BOX POLE/POST MT	EACH	1.000				
X7015000	CHANGEABLE MESSAGE SN	CAL MO	20.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				
Z0048665	RR PROT LIABILITY INS	L SUM	1.000				
67100100	MOBILIZATION	L SUM	1.000				
70102635	TR CONT & PROT 701701	L SUM	1.000				
70102640	TR CONT & PROT 701801	L SUM	1.000				
81001000	CON T 4 GALVS	FOOT	6.000				
86400100	TRANSCEIVER - FIB OPT	EACH	2.000				

CONTRACT NUMBER

62803

THIS IS THE TOTAL BID

\$ _____

NOTES:

1. Each PAY ITEM should have a UNIT PRICE and a TOTAL PRICE.
2. The UNIT PRICE shall govern if no TOTAL PRICE is shown or if there is a discrepancy between the product of the UNIT PRICE multiplied by the QUANTITY.
3. If a UNIT PRICE is omitted, the TOTAL PRICE will be divided by the QUANTITY in order to establish a UNIT PRICE.
4. A bid may be declared UNACCEPTABLE if neither a unit price nor a total price is shown.

RETURN WITH BID

STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. By execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances has been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for termination of the contract and the suspension or debarment of the bidder.

II. ASSURANCES

A. The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any state agency from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois Toll Highway authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is \$150,700.00. Sixty percent of the salary is \$90,420.00.

RETURN WITH BID

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

D. Negotiations

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Inducements

1. The Illinois Procurement Code provides:

Section 50-25. Inducement. Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

F. Revolving Door Prohibition

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, associate procurement officers, State purchasing officers, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

G. Reporting Anticompetitive Practices

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the chief procurement officer.

2. The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

H. Confidentiality

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

2. The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

RETURN WITH BID

I. Insider Information

1. The Illinois Procurement Act provides:

Section 50-50. Insider information. It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

2. The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

III. CERTIFICATIONS

A. The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Bribery

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The bidder certifies that it is not barred from being awarded a contract under Section 50.5.

C. Educational Loan

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

D. Bid-Rigging/Bid Rotating

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article. The State and units of local government shall provide the appropriate forms for such certification.

RETURN WITH BID

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

2. The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

E. International Anti-Boycott

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. Every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or \$10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

2. The bidder makes the certification set forth in Section 5 of the Act.

F. Drug Free Workplace

1. The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

2. The bidder certifies that if awarded a contract in excess of \$5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor's workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor's policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

G. Debt Delinquency

1. The Illinois Procurement Code provides:

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

H. Sarbanes-Oxley Act of 2002

1. The Illinois Procurement Code provides:

Section 50-60(c).

The contractor certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

I. ADDENDA

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

J. Section 42 of the Environmental Protection Act

The contractor certifies in accordance with 30 ILCS 500/50-12 that the bidder or contractor is not barred from being awarded a contract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The contractor acknowledges that the contracting agency may declare the contract void if this certification is false.

K. Apprenticeship and Training Certification (Does not apply to federal aid projects)

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and each of its subcontractors. Unless otherwise directed in writing by the Department, applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's forces. Types of work or craft work that will be subcontracted may be indicated as to be subcontracted.

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract.

IV. DISCLOSURES

A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Illinois Procurement Code provides that all bids of more than \$10,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

C. Disclosure Form Instructions

Form A: For bidders that have previously submitted the information requested in Form A

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs the Certification, the Bidder should proceed to Form B instructions.

CERTIFICATION STATEMENT

I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.

(Bidding Company)

Name of Authorized Representative (type or print)

Title of Authorized Representative (type or print)

Signature of Authorized Representative

Date

Form A: For bidders who have NOT previously submitted the information requested in Form A

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than \$90,420.00? YES ___ NO ___
3. Does anyone in your organization receive more than \$90,420.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES ___ NO ___
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than \$90,420.00? YES ___ NO ___
(Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable.** The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

Form B: Identifying Other Contracts & Procurement Related Information Disclosure Form B must be completed for each bid submitted by the bidding entity. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the signature box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

D. Bidders Submitting More Than One Bid

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item _____ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

RETURN WITH BID/OFFER

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**Form A
Financial Information &
Potential Conflicts of Interest
Disclosure**

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of \$10,000, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than \$90,420.00 (60% of the Governor's salary as of 7/1/01). **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):
% or \$ value of ownership/distributable income share: _____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services.

Yes ___ No ___

If your answer is yes, please answer each of the following questions.

- Are you currently an officer or employee of either the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___ No ___
- Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name the State agency for which you are employed and your annual salary. _____

RETURN WITH BID/OFFER

- 3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No ___

- 4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes ___ No ___

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes ___ No ___

If your answer is yes, please answer each of the following questions.

- 1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___ No ___

- 2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the salary of the Governor as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No ___

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes ___ No ___

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___ No ___

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___ No ___

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes ___ No ___

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(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.

Completed by: _____
Name of Authorized Representative (type or print)

Completed by: _____
Title of Authorized Representative (type or print)

Completed by: _____ Date _____
Signature of Individual or Authorized Representative

NOT APPLICABLE STATEMENT

I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

Name of Authorized Representative (type or print)

Title of Authorized Representative (type or print)

Signature of Authorized Representative Date _____

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ILLINOIS DEPARTMENT
OF TRANSPORTATION

Form B
Other Contracts &
Procurement Related Information
Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of \$10,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No ___

If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE SIGNED

Name of Authorized Representative (type or print)	

Title of Authorized Representative (type or print)	
_____	_____
Signature of Authorized Representative	Date

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SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

- (a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.
- (b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.
- (c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

**Contract No. 62803
COOK County
Section 2004-064TS
Project IM-943(374)57
Route FAI 90/94
District 1 Construction Funds**

PART II. WORKFORCE PROJECTION - continued

- B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

- C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

- A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.
- B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____ Telephone Number _____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: _____ Title: _____ Date: _____

- Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.
- Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.
- Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.
- Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

RETURN WITH BID

ADDITIONAL FEDERAL REQUIREMENTS

In addition to the Required Contract Provisions for Federal-Aid Construction Contracts (FHWA 1273), all bidders make the following certifications.

- A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.
- B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:
1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES _____ NO _____
 2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES _____ NO _____

RETURN WITH BID

**Contract No. 62803
COOK County
Section 2004-064TS
Project IM-943(374)57
Route FAI 90/94
District 1 Construction Funds**

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL) Firm Name _____
Signature of Owner _____
Business Address _____

(IF A CO-PARTNERSHIP) Firm Name _____
By _____
Business Address _____
Name and Address of All Members of the Firm: _____

(IF A CORPORATION) Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW) Attest _____
Signature _____
Business Address _____

(IF A JOINT VENTURE) Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____

Attest _____
Signature _____
Business Address _____

If more than two parties are in the joint venture, please attach an additional signature sheet.

RETURN WITH BID



Illinois Department of Transportation

Division of Highways
Proposal Bid Bond
(Effective November 1, 1992)

Item No.
Letting Date

KNOW ALL MEN BY THESE PRESENTS, That We

as PRINCIPAL, and

held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of invitation for bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, That Whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents, submit a DBE Utilization Plan that is accepted and approved by the Department; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to make the required DBE submission or to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this day of A.D.,

PRINCIPAL

SURETY

(Company Name)

(Company Name)

By: (Signature & Title)

By: (Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
COUNTY OF

I, a Notary Public in and for said County, do hereby certify that and

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this day of, A.D.

My commission expires Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing below the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID# Company/Bidder Name Signature and Title

PROPOSAL ENVELOPE



PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10" x 13" envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 323
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

**Contract No. 62803
COOK County
Section 2004-064TS
Project IM-943(374)57
Route FAI 90/94
District 1 Construction Funds**



Illinois Department of Transportation



- 1. TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., January 21, 2005. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.
- 2. DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 62803
COOK County
Section 2004-064TS
Project IM-943(374)57
Route FAI 90/94
District 1 Construction Funds**

Traffic signal modernization and street lighting along I-90/94 at 51st Street between South Wentworth Avenue and South Wells Street in Chicago.

- 3. INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
- 4. AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2004

This sheet contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 1-1-02) (Revised 1-1-04)

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2002, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAI 90/94 (I-90/94), Section 2004-064TS, Project IM-094-3(374)057 County: Cook and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

FAI 90/94 (I-90/94)
Section: 2004-064TS
County: Cook
Contract No.: 62803

LOCATION OF PROJECT

The project extends along 51st Street from approximately 85 feet west of Wells Street baseline to approximately 80 feet east of Wentworth Avenue in the City of Chicago, in Cook County.

DESCRIPTION OF PROJECT

The project consists of traffic signal modernizations, including roadway street lighting along 51st Street between S. Wentworth Avenue and S. Wells Street.

UTILITY COORDINATION - CITY OF CHICAGO

Effective: September 30, 1985

Revised: November 1, 1996

The City of Chicago is to make adjustments to their street lighting and/or traffic signal facilities. The Contractor shall coordinate his work and cooperate with the City of Chicago in these adjustments.

This coordination and cooperation by the Contractor will not be paid for separately but shall be considered included in the costs of the contract.

COMPLETION DATE PLUS GUARANTEED WORKING DAYS

The Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on, November 14, 2005.

Article 108.09 of the Standard Specifications or the Special Provision for Failure to Complete the Work on Time, if included in this contract, shall apply to both the completion date and the number of working days.

COORDINATION WITH ADJACENT AND/OR OVERLAPPING CONTRACTS

This Contract abuts and/or overlaps with other concurrent Contracts as listed below. Each Contract includes work items requiring close coordination between the Contractors regarding the sequence and timing for the execution of such work items.

Contract Number 62586	Contract Number 62802
Contract Number 62796	Contract Number 62804
Contract Number 62797	Contract Number 62806
Contract Number 62798	Contract Number 62807

Supplemental to the requirements of the Standard Specifications Article 105.08-Cooperation Between Contractors, the Contractors shall identify all such work items at the beginning of the Contract, and coordinate sequence and timing for their execution with the other Contractors through the Engineer. These work items shall be identified as separate line items in the Contractors' proposed Construction and Progress Schedule. Any conflicts between Contractors' schedules, the Department will be consulted through the Engineer to determine a resolution. Additional compensation or extension of the contract time will not be allowed for work and/or progress and/or lack of progress affected by lack of such coordination by the Contractor.

CONTRACTOR COOPERATION

The Contractor's attention is directed to the fact that other separate contracts may be under construction during the duration of this Contract and that the Contractor will be governed by Article 105.08 of the Standard Specifications.

The Contractor will coordinate proposed project start dates and sequence of construction with the Engineer and other Contractors to present an effective and timely schedule for successful completion of the project.

No additional compensation will be allowed the Contractor for the above requirements or for any delays or inconvenience resulting from the activities of other contractors.

TRAFFIC CONTROL PLAN

Effective: September 30, 1985 Revised: October 1, 1995

Traffic Control shall be in accordance with the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plans, and the Special Provisions contained herein.

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to traffic control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

HIGHWAY STANDARDS

- 701701 Urban Lane Closure Multilane Intersection
- 701801 Lane Closure Multilane 1W or 2W Crosswalk or Sidewalk Closure
- 702001 Traffic Control Devices

PLANS AND DETAILS

- TC-22 Temporary Information Signing

RECURRING SPECIAL PROVISIONS AND SPECIAL PROVISIONS

- Advanced Public Notification
- Flagger Vests (BDE)
- Personal Protective Equipment (BDE)
- Temporary Concrete Barrier (BDE)
- Temporary Information Signing
- Traffic Control Deficiency Deduction (BDE)
- Work Zone Traffic Control Devices (BDE)

ADVANCED PUBLIC NOTIFICATION

The Contractor shall provide notice to the public a minimum of 14 days in advance of any work that requires the closure of lanes or ramps through the use of a changeable message sign or temporary information signing.

TEMPORARY INFORMATION SIGNING

Description. This item consists of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, signs on temporary stands, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

Materials: Materials shall be according to the following Articles of Section 1000 - Materials:

	<u>Item</u>	<u>Article/Section</u>
a)	Sign Base (Notes 1 & 2)	1090
b)	Sign Face (Note 3)	1091
c)	Sign Legends	1092
d)	Sign Supports	1093
e)	Overlay Panels (Note 4)	1090.01

- Note 1. The Contractor may use 16mm (5/8 inch) instead of 19mm (3/4 inch) thick plywood.
- Note 2. Type A sheeting can be used on the plywood base.
- Note 3. All sign faces shall be Type A except all orange signs shall meet the requirements of Article 1084.02(b).
- Note 4. The overlay panels shall be 2mm (0.08 inch) thick.

GENERAL CONSTRUCTION REQUIREMENTS

Installation: The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 702.05 and Article 720.04. The signs shall be 2.1m (7') above the near edge of the pavement and shall be a minimum of 600mm (2') beyond the edge of the paved shoulder. A minimum of 2 posts shall be used.

The attachment of temporary signs to existing sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Signs which are placed on overhead bridge structures shall be fastened to the handrail with stainless steel bands. These signs shall rest on the concrete parapet where possible. The Contractor shall furnish mounting details for approval by the Engineer.

Method of Measurement. This Work shall be measured for payment in square feet edge to edge (horizontally and vertically).

All hardware, posts, supports, bases for ground mounted signs, connections, which are required for mounting these signs are included as part of this pay item.

Basis of Payment. This Work will be paid for at the contract unit price per square feet for TEMPORARY INFORMATION SIGNING, which price shall be full compensation for all labor, equipment and materials required for performing the work as herein specified.

(CTE – 10/15/2004)

CHANGEABLE MESSAGE SIGNS

This item shall conform to the Recurring Special Provision for "Portable Changeable Message Signs"

Four (4) signs will be required for this contract.

CONSTRUCTION AIR QUALITY - DUST CONTROL

Description. This work shall consist of developing and implementing a detailed Dust Control Plan (DCP). Development of a DCP is required in "Non-attainment" and "Maintenance" areas, per Article 107.36 of the Standard Specifications. All construction activities shall be governed by the DCP. The nature and extent of dust generating activities, and specific control techniques appropriate to specific situations shall be discussed at the pre-construction meeting, with subsequent development of the DCP to include but not be limited to the requirements below.

The Contractor is responsible for the control of dust at all times during the duration of the contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays. This work shall be considered complete after the completion of all permanent erosion control measures required for the contract, and after all temporary and permanent seeding has taken place. Work on this contract shall be conducted in a manner that will not result in generating excessive air borne particulate matter (PM) or nuisance dust conditions.

The DCP shall include legible copies of the product literature and Material Safety Data Sheets for dust suppression agents and stabilizers the contractor proposes to use. The Dust Control Plan shall involve the implementation of control measures before, during and after conducting any dust generating operation. These controls must be in place on non-working days and after working hours, not just while work is being done on the site. The Dust Control Plan must contain information specific to the project site, proposed work, and dust control measures to be implemented. A copy of the Dust Control Plan must be available on the project site at all times.

The Dust Control Plan must contain, at a minimum, all of the following information:

Name, address and phone number of the person(s) responsible for the dust generating operation and for the submittal and implementation of the Dust Control Plan.

A drawing specifying the site boundaries of the project with the areas to be disturbed, the locations of the nearest public roads, and all planned exit and entrance locations to the site from any paved public roadways.

Control measures to be applied to all actual and potential fugitive dust sources before, during and after conducting any dust generating operation, including non-work hours and non-work days.

A list of dust suppressants to be applied, including product specifications, Material Safety Data Sheets, and product label instructions that include the method, frequency and intensity of applications; and information on the environmental impacts and approval or certifications related to the appropriate and safe use for ground applications.

A contingency plan consisting of at least one contingency measure for each activity occurring on the site in case the primary control measure proves inadequate.

The Contractor shall submit two copies of the DCP that outlines in detail the measures to be implemented by the Contractor complying with this section, including prevention, cleanup, and other measures at least 14 days before beginning any dust generating activity. The Contractor shall not begin any dust generating activities until the Engineer approves the DCP in writing. Failure to comply with the DCP or provisions herein will subject the contractor to an "Environmental Deficiency Deduction," as outlined below.

Materials

1. Dust Suppression Agents

Dust suppression agents shall be water soluble, non-toxic, non-reactive, non-volatile, and non-foaming. The use of petroleum for dust control is prohibited.

Calcium Chloride shall conform to the requirements of Article 1013.01 of the Standard Specifications. Other commercially available dust suppression agents may be substituted for calcium chloride subject to the approval of the Engineer. Material Safety Data Sheets must be reviewed and approved by the Engineer prior to the use of any substances other than Calcium Chloride.

Water shall meet the requirements of Article 1002 of the Standard Specifications.

2. Soil stabilizers shall consist of seed and mulch meeting the requirements of Article 1081.06 (a) (2) and (3).
3. Covers for stockpiles shall be commercially available plastic tarps, or other materials approved by the Engineer.

Construction Methods. Dust suppression agents shall be used to provide temporary control of dust on haul roads and other active work areas. Several applications per day may be necessary to control dust depending upon meteorological conditions and work activity. The Contractor shall apply dust suppression on a routine basis as necessary or as directed by the Engineer to control dust. Wet suppression consists of the application of water or a wetting agent in solution with water. Wetting agents shall not be applied directly to live plant material. Wet suppression equipment shall consist of sprinkler pipelines, tanks, tank trucks or other devices approved by the Engineer, capable of providing a regulated flow, uniform spray and positive shut off.

Calcium chloride dust suppression agents may be used in lieu of wet suppression only when freezing conditions exist. Calcium chloride shall be uniformly applied by a mechanical spreader at a rate of 1 and 1/2 pounds per square yard or its equivalent liquid, unless otherwise directed by the Engineer. Calcium chloride shall not be directly applied to live plant material.

Calcium chloride must not be stored outdoors without an impermeable cover. Storage must be on an impermeable surface such as paved asphalt or appropriately treated concrete of sufficient thickness to avoid exfiltration. Storage should be as airtight as possible to limit the calcium chloride's absorbing moisture from the air. No storage facilities will be allowed within 100 feet of a storm sewer, or any other drain. Positive drainage must be maintained on all treated surfaces. Ditches, culverts and other structures must be kept clean to ensure proper drainage and to limit the amount of water infiltrating earth surfaces and thereby leeching out chlorides. If calcium chloride is applied dry, or during dry periods, and crystals are seen on the road surface, the road should be wetted sufficiently to dissolve the calcium chloride. Wetting should be limited to an amount that will sufficiently cause the calcium chloride to penetrate the surface but not to the point of causing any runoff from the road surface. Other approved dust suppression agents shall be applied and used as per the manufacturer's instructions.

Haul truck cargo areas shall be securely covered during the transport of materials on public roadways that are prone to cause dust.

Public Roadway Dust Control. Track out, including carryout and spillage of material that adheres to the exterior surfaces of or are spilled from motor vehicles and/or equipment and subsequently fall onto a paved public roadway must be controlled at all times. Clean up of carryout and spillage is required immediately if it extends a cumulative distance of 50 feet or more on a paved public roadway. If the extent of carryout is less than 50 feet, clean up at the end of the day is permissible. Clean up of paved surfaces shall be by wet spray power vacuum street sweeper. Dry power sweeping is prohibited.

Control of earthwork dust. During batch drop operations (i.e. earthwork with a front-end loader, clamshell bucket, or backhoe), the free drop height of excavated or aggregate material shall be reduced to minimum heights as necessary to perform the specified task, and to minimize the generation of dust. To prevent spills during transport, a minimum of 2 inches of freeboard space shall be maintained between the material load and the top of the truck cargo bed rail. A maximum drop height of two feet (or minimum height allowed by equipment) will be allowed, or to heights as directed by the Engineer.

Control of dust on stockpiles and inactive work areas. The Contractor shall use the following methods to control dust and wind erosion of stockpiles and inactive areas of disturbed soil:

Dust suppression agents shall be used during active stockpile load-in, load-out, and maintenance activities.

Soil stabilizers (hydraulic or chemical mulch) shall be applied to the surface of inactive stockpiles and other inactive areas of disturbed soil. Final grading and seeding of inactive areas shall occur immediately after construction activity is completed in an area and as directed by the Engineer.

Plastic tarps may be used on small stockpiles, secured with sandbags or an equivalent method approved by the Engineer, to prevent the cover from being dislodged by the wind. The Contractor shall repair or replace the covers whenever damaged or dislodged at no additional cost.

Method of Measurement. All measuring devices shall be furnished by the Contractor and approved by the Engineer.

Calcium chloride and other approved dust suppression agents shall be mixed with water at the rate specified by the manufacturer and measured for payment in units of 1000 Gallons of solution applied.

The application of soil stabilizers shall be measured by weight (pounds) of soil stabilizer. The soil stabilizer will then be added to water to form a solution in accordance with the manufacturer's recommendation.

All other dust control measures will not be measured for payment.

Basis of Payment. The application of dust suppression agents shall be paid for at the contract unit price per unit for **APPLYING DUST SUPPRESSION AGENT**.

Soil stabilizers will be paid for at the contract price per pound for **SOIL STABILIZERS**.

All other dust control measures will not be paid for directly but shall be considered as included in the various items involved and no additional compensation will be allowed.

CONSTRUCTION AIR QUALITY–DIESEL VEHICLE EMISSIONS CONTROLS

Description. The reduction of emissions of Carbon Monoxide (CO), Hydrocarbons (HC), Nitrogen oxides (NOx), and Particulate Matter (PM) will be accomplished by installing Retrofit Emission Control Devices and/or by using cleaner burning diesel fuels. The term "equipment" refers to any and all diesel fuel powered devices rated at 50 Horse power (HP) and above, to be used on the project site for any length of time, (including any "rented" or "rental" equipment).

All Contractor and Sub-contractor diesel powered equipment with engine horsepower (HP) ratings of 50 HP and above, that are on the project or are assigned to the contract shall be prohibited from using “off-road” diesel fuel (above 500 parts per million (ppm) sulfur content) at any time. In addition, diesel powered equipment shall be either (1) retrofitted with Emissions Control Devices *and* use Cleaner burning “on-road” diesel fuel (500 ppm sulfur content or less), or (2) use Ultra Low Sulfur Diesel fuel (ULSD) exclusively (15 ppm sulfur content or less), in order to reduce diesel particulate matter emissions. Large cranes (Sky cranes or Link Belt cranes), which are responsible for critical lift operations are exempt from installing Retrofit Emission Control Devices if they adversely affect equipment operation.

In addition, all construction motor vehicles (both on-road and off-road, gasoline or diesel fuel powered) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety, including opacity. Frequently Asked Questions (FAQ's) regarding Illinois Environmental Protection Agency (IEPA) emissions testing for gasoline powered vehicles can be accessed at (www.epa.state.il.us/air/vim/faq/testing.html). Regulations regarding diesel powered vehicles over 16,000 pounds, and the Diesel Emission Inspection Program (Title 92: Transportation Part 460, Diesel Emission Inspection Program, Subpart A: General) can be accessed at (www.dot.state.il.us/regulations.html). Diesel powered vehicles less than 16,000 pounds are exempt from testing by IDOT. All diesel powered equipment used on the project site shall be subject to reasonable, random spot checks for compliance with the required emissions controls and proper diesel fuel usage. The Secretary of State, Illinois State Police and other law enforcement officers shall enforce Part 460. For additional information concerning Illinois diesel emission inspection requirements, please call the Illinois Department of Transportation, Diesel Emission Inspections Unit, at 217-557-6081.

The Retrofit Emission Control Devices shall consist of oxidation catalysts, or similar retrofit equipment control technology that (1) is included on the Environmental Protection Agency (EPA) *Verified Retrofit Technology List* (www.epa.gov/otaq/retrofit/retroverifiedlist.html) and (2) is verified by EPA or certified by the manufacturer via letter, to provide a minimum emissions reduction of 20% PM10, 40% CO, and 50% HC when used with “on-road” diesel fuel. As noted above, the Retrofit Emission Control Device *must be used with on-road diesel fuel* (500 ppm sulfur content or less).

If used, ULSD fuel shall conform to American Society for Testing and Materials (ASTM) D-975 diesel with the following additional specifications:

ASTM D-5453 15 ppm Sulfur max.
ASTM D-6078 Lubricity (SBOCLE) 3100 g min.
ASTM D-613 Cetane 45 min.
Dyed (for Off-road use)

Construction shall not proceed until the contractor submits a certified list of the diesel powered equipment that will be retrofitted with emission control devices and use “on-road” diesel fuel, and a list of equipment that will use ULSD fuel only. The list(s) shall include (1) the equipment number, type, make, and contractor/sub-contractor name; (2) the emission control devices make, model and EPA verification number; and (3) the type and source of clean fuels to be used. Vehicles reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation by qualified staff, prior to being used on the project site. Diesel powered equipment in non-compliance will not be allowed to be used on the project site, and is also subject to a “Notice of Non-Compliance” as outlined below under “Environmental Deficiency Deduction.”

The contractor shall submit monthly summary reports, updating the list of construction equipment, and include certified copies of the diesel fuel delivery slips (for both "on-road" and ULSD) for the reporting time period, noting the type of diesel fuel used with each piece of diesel powered equipment. The addition or deletion of any diesel powered equipment shall be included in the summary and noted on the monthly report.

If any diesel powered equipment is found to be in non-compliance with any portion of this specification, the Engineer will issue the contractor a Notice of Non-Compliance and given an appropriate period of time, as outlined below under "Environmental Deficiency Deduction," in which to bring the equipment into compliance or remove it from the project site. Failure to comply with the "Diesel Vehicle Emission Controls", shall also subject the Contractor or sub-contractor to an "Environmental Deficiency Deduction," as outlined below.

Any costs associated with bringing any diesel powered equipment into compliance with these "Diesel Vehicle Emissions Controls" shall be included in the overall cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall also not be grounds for a claim.

A. IDLING. The contractor shall establish truck-staging areas for all diesel powered vehicles that are waiting to load or unload material at the contract area. Such zones shall be located where the diesel emissions from the equipment will have a minimum impact on adjacent abutters and sensitive receptors of the general public. The Department will coordinate such locations with the Contractor and City Of Chicago authorities, including local aldermen, in the selection of staging areas, whether within or outside the existing highway right-of-way (ROW), to avoid locations near sensitive areas or populations to the extent possible. Sensitive receptors include, but are not limited to hospitals, schools, residences, motels, hotels, daycare facilities, elderly housing and convalescent facilities. Diesel powered engines shall also be located as far away as possible from fresh air intakes, air conditioners, and windows. Idling of diesel powered equipment shall not be permitted during periods of non-active vehicle use. Diesel powered engines shall not be allowed to idle for more than five consecutive minutes when the equipment is not in use, occupied by an operator, or otherwise in motion, except only as follows:

When the equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;

When it is necessary to operate auxiliary systems installed on the equipment, only when such system operation is necessary to accomplish the intended use of the equipment;

To bring the equipment to the manufacturer's recommended operating temperature;

When the outdoor temperature is below forty-five (45) degrees Fahrenheit or above eighty (80) degrees Fahrenheit;

When the equipment is being repaired.

All work shall be conducted to ensure that no harmful effects are caused to adjacent sensitive receptors. Equipment and equipment operators found in non-compliance with these idling provisions shall receive a warning, and on the next offense be subject to an Environmental Deficiency Deduction as outlined below. The contractor or sub-contractor may reserve the right to enforce this deduction on their own equipment operator, as necessary.

B. MITIGATION. Air quality monitoring will be conducted throughout the course of the Dan Ryan reconstruction project, by a separate air quality consultant. The contractor shall designate a point person to be responsive to IDOT in the event construction related air quality issues arise. If the ongoing monitoring detects an adverse air quality issue that is due to, or exacerbated by construction activities, the contractor's point person will be required to consult with the Engineer, to determine the appropriate course of action.

Appropriate mitigation measures can include a variety of actions ranging from, but not limited to additional watering, removal of construction equipment from nearby sensitive receptors, shut down of diesel powered equipment, or other mitigation measures which may be required as data becomes available and as approved by the Engineer.

Method of Measurement and Basis of Payment:

The **CONSTRUCTION AIR QUALITY – DIESEL EMISSIONS CONTROLS** will not be measured for payment and the cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.

CONSTRUCTION NOISE MITIGATION

Description. This work shall consist of implementing construction noise restrictions as outlined in a project Construction Noise Mitigation plan. Work on the project shall be in accordance with the Construction Noise Mitigation plan submitted by the contractor, applicable sections of Article 107.35 of the Standard Specifications, and modifications as contained herein for construction noise.

The contractor must provide advance notification, and secure approval from the Engineer prior to the use of heavy construction equipment outside normal construction work hours ("normal construction work hours" as specified in Article 107.35 of the Standard Specifications). Inspection and maintenance of all vehicle exhaust systems shall be conducted on a monthly basis, (or as determined by the Engineer), for all such vehicles and other equipment assigned to or utilized on the project site. Inspections shall be conducted by personnel having a working knowledge of exhaust systems so that proper recommendations regarding the adequacy of the mufflers can be established.

Construction Equipment

Pavement Breakers create high concentrations of low frequency sound energy, and noise attenuation can be achieved through the introduction of high-mass material between the noise source and the receiver. The attachment of shrouds (sound curtains) to the steel frame around the breaker shall be installed, as equipment allows. The operation of pavement breakers shall be prohibited outside of normal work hours, as specified herein, unless otherwise approved by the Engineer.

Special care shall be taken with respect to the set up and operation of concrete batch and concrete crushing plants to minimize the potential noise impacts to the adjacent community. The Department will work with the Contractor and City Of Chicago authorities, including local aldermen in selecting construction concrete batch and/or crushing locations, whether within or outside the ROW, to avoid locations near sensitive areas or populations to the extent possible. All local, City, Village, Town and/or Township rules, regulations, and/or requirements regarding batch and crushing plants shall be followed, as instructed by the Engineer.

Compressors or generators shall be located as far away as possible from sensitive receptors. Compressors and generators shall be positioned such that the coding fan intake does not point towards the community. The Contractor shall review stationary equipment placement with the Engineer prior to commencement of work.

Method of Measurement and Basis of Payment:

The **CONSTRUCTION NOISE MITIGATION** will not be measured for payment and the cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.

ENVIRONMENTAL DEFICIENCY DEDUCTION

To ensure a prompt response to incidents involving the integrity of work zone Environmental (Air Quality and Noise) Control, the Contractor shall provide a telephone number where a responsible individual can be contacted on a 24 hour a day basis.

When the Engineer is notified, or determines an environmental control deficiency exists, he/she will notify the Contractor in writing, and direct the Contractor to correct the deficiency within a specified time frame. The specified time frame, which begins upon contractor notification, will be from 1/2 hour to 24 hours long, based on the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

The deficiency may include lack of repair, maintenance or non-compliance with the Special Provisions for Construction Air Quality Dust Control and/or Construction Noise Mitigation.

If the Contractor fails to correct the deficiency within the specified time frame, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with Contractor's notification and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1,000.00 or 0.05 percent of the awarded contract value, whichever is greater.

In addition, if the Contractor or sub-contractor fails to respond within the allotted time frame, the Engineer may take action to correct the deficiency, or may cause the correction of the deficiency to be made by others, the cost thereof being deducted from monies due or which may become due the Contractor or sub-contractor. This corrective action will in no way relieve the Contractor or sub-contractor of his/her contractual requirements or responsibilities, and shall not be grounds for any claim.

If a Contractor or sub-contractor accumulates three (3) Deficiency Deductions for the same deficiency, in a contract period, the contractor will be shut down until the deficiency is corrected. Such a shut down will not be grounds for any extension of the completion date, waiver of penalties, or be grounds for any claim.

CONTRACTOR OFF-STREET PARKING RESTRICTION

The Contractor and all employees working on this project will not be allowed to park their vehicles and equipment on frontage roads or streets. The Contractor shall provide off-street parking facility for all vehicles and equipment. The Contractor shall also provide any transportation required to get his employees to and from the work site. The Contractor will provide the RE with written documentation of the off-site parking location.

The cost to comply with this requirement will not be paid for separately, but shall be considered as included in the contract unit bid prices of the contract, and no additional compensation will be allowed.

RAILROAD PROTECTIVE LIABILITY INSURANCE

Description. The Contractor will be required to carry Railroad Protective Liability and Property Damage Insurance in accordance with Article 107.11 of the Standard Specifications. The limits of liability shall be in accordance with Article 107.11 for the Standard Specifications unless otherwise noted. A separate policy is required for each railroad indicated below unless otherwise noted.

<u>NAMED INSURED & ADDRESS</u>	<u>NUMBER & SPEED OF PASSENGER TRAINS</u>	<u>NUMBER & SPEED OF FREIGHT TRAINS</u>
Chicago Transit Authority (CTA) 120 North Racine Avenue Chicago, IL 60607	M-F 382 trains/day at 55 mph	0
	Sat 338 trains/day at 55 mph	0
	Sun 356 trains/day at 55 mph	0

For Freight/Passenger and Insurance Information, please contact the CTA Representative, Mr. Marvin A. Watson (312) 681-3860

Basis of Payment: The costs for providing insurance, as noted above, will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

APPROVAL OF INSURANCE: The ORIGINAL* and one CERTIFIED copy of each required policy shall be submitted to ENGINEER OF DESIGN, ILLINOIS DEPARTMENT OF TRANSPORTATION, 2300 SOUTH DIRKSEN PARKWAY, SPRINGFIELD, ILLINOIS 62764 for approval. The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Resident Engineer evidence that the required railroad protective liability insurance has been approved by the railroad(s). The Contractor shall also provide the Resident Engineer with expiration date of each required policy.

*An additional original or required policy shall be submitted to the CTA.

SPECIAL PROVISION - OPERATION OF TRAFFIC SIGNALS

Existing traffic control signal installations and/or any electrical facilities at certain intersections included in this Section may be altered or reconstructed totally or partially as part of the Work on this Section. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, is the property of the City of Chicago.

The Contractor is further advised that the existing traffic signals, or the existing temporary installation, shall remain in operation during all construction stages except for the most essential down time. Any shutdown of the installation, for a period to exceed fifteen (15) minutes, will have the prior approval of the Engineer. Such approval will generally only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Any other traffic signal shutdown, either for periods in excess of one (1) hour or outside of the 10:00 a.m. to 3:00 p.m. weekday period shall have prior approval of the Engineer.

Any known or suspected damage to the electrical facility shall be reported immediately to the Engineer. The Contractor will be held fully responsible for the repair and/or temporary, if, in sole opinion of the Engineer, such damage was caused by the negligence of the Contractor, his agents, or employees.

No part of this Special Provision shall be construed as exempting the Contractor from his duty to follow careful construction practices, including all standard provisions in the Standard Specifications for Road and Bridge Construction.

Traffic Signal Turn On.

The intent of this Special Provision is to prescribe a procedure wherein a Contractor may obtain formal approval of a traffic signal installation at a given intersection, and a release from maintenance responsibility for the new materials installed, in order to be permitted to disconnect and remove the old traffic signal equipment.

When the road is open to traffic, except under conditions where existing traffic signals are being maintained or when a temporary traffic signal installation has been installed, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request will be made to the Bureau of Electricity, a minimum of three (3) working days prior to the time of the requested inspection. Upon demonstration that the signals are operating and all Work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Bureau of Electricity's Inspector will then allow the signals to be placed into continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

CONDUIT IN TRENCH, GALVANIZED STEEL

Description. This item consists of furnishing and installing conduits, fittings, and accessories, laid in trench as shown on the plans and as directed by the Engineer. This item does not include excavation or backfill of the trench.

General Requirements. Perform work in accordance with Section 810 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Materials. Rigid Steel Conduit shall conform to BOE Material Specification 1462.

Installation. Conduits shall be installed at locations as shown diagrammatically on the plans. Conduits shall be installed in the shortest practicable line between points of termination, or under adverse conditions, as directed by the Engineer. Conduits not shown on the plans, but necessary for installation, will be paid for at the applicable bid unit price as additional units of construction.

Conduit under pavement shall be located at least 24 inches from the face of curb unless noted otherwise on the plans.

All underground conduit shall have a minimum depth of 30 inches below grade.

When multiple conduits in a common trench are required, no more than three (3) 4 inch or smaller conduits shall be laid on a single, horizontal level. Four (4) or more conduits shall be installed on two (2) levels as directed by the Engineer.

Conduits transitioning from trench to bridge abutments shall be securely attached to the retaining wall by means of galvanized clamps and clamp backs held in place by anchor bolts. Conduits shall be fastened as close to the underside of the abutment as possible, and securing clamps shall be installed every 5 feet. Conduits shall be continuous through party walls.

Plowed installation will not be allowed.

Method of Measurement. Conduit in trench will be measured according to Section 810 of the Standard Specifications.

Basis of Payment. This Work will be paid for at the contract unit price per foot for CONDUIT IN TRENCH, GALVANIZED STEEL of the size and type specified.

(CTE – 10/15/2004)

INNERDUCT IN CONDUIT, 1 1/4 INCH

Description. This item consists of furnishing and installing innerduct in existing or proposed conduit for the eventual placement of fiber optic cable, as shown on the plans or as directed by the Engineer.

Material. Fiber optic innerduct shall be flexible plastic such as polyethylene with a minimum bending radius not less than the minimum bending radius of the fiber optic cable which it supports.

The innerduct shall be orange in color for ease of identification, and shall have a preinstalled pull rope or pull tape to facilitate cable pulling. Where used, innerduct shall not include pre-installed fiber optic cable. Fiber optic cable shall be installed in the innerduct after the innerduct is installed.

The innerduct shall meet, as a minimum, the following specifications:

Nominal Outside Diameter:	1.580"
Nominal Inside Diameter:	1.25"
Minimum Tensile Strength:	4000 lbs.
Minimum Impact Resistance:	25 lbs.
Minimum Crush Resistance:	900 lbs.
Maximum Pull Load:	1200 lbs.

The innerduct shall be ribbed longitudinally along the interior and exterior of the innerduct to minimize friction during cable installation and to prevent spiraling of the innerduct during installation in the conduit. The inside of the innerduct shall have a permanent coat of silicone or equivalent compound during manufacture to reduce friction during the installation of the cable.

Installation. The innerduct shall be pulled into the conduit per the manufacturer's instructions. The innerduct shall be used to protect and isolate the fiber optic cable. The cable shall be installed separately under a different pay item.

Innerduct shall not run continuous through manholes, handholes, or vaults; but shall be terminated at each wall of structures using methods recommended by the manufacturer.

Method of Measurement. The innerduct will be measured per foot installed, and will include only horizontal distances as shown on the plans, or as directed by the Engineer.

Basis of Payment. This Work will be paid for at the contract unit price per foot for INNERDUCT IN CONDUIT, 1¼ INCH.

(CTE – 10/15/2004)

ROD AND CLEAN DUCT IN EXISTING CONDUIT SYSTEM

Description. This item consists of inserting a duct rod or electrical fish rod or tape of sufficient length and rigidity into an electrical conduit opening in one electrical manhole or handhole, and pushing said rod through the conduit to emerge at the next or subsequent manhole in the conduit system at the location shown on the plans. The duct rod may be inserted and removed by any standard construction method which causes no damage to the conduit system. The size of the conduit may vary from two inch (2") to four inch (4"), but there shall be no differentiation in cost for the size of the conduit.

Construction Requirements.

Cleaning: Prior to starting construction, an inspection of all the existing manholes, will be made by the Engineer and the Contractor to determine the amount of existing debris in these structures. Upon completion of the work, the Contractor shall clean debris due to construction. Cleaning of existing manholes will be paid under a separate item.

Prior to removal of the duct rod a duct cleaning attachment such as a properly sized wire brush or cleaning mandrel shall be attached to the duct rod, which shall be pulled through the conduit to remove sand, grit, or other light obstructions from the duct to provide a clean, clear passage for the installation of cable.

Whenever the installation of cables is not performed as an adjunct to or immediately following the cleaning of the duct, a light weight pulling line such as a 1/8" polyethylene line or conduit measuring tape shall be placed and shall remain in the conduit to facilitate future work.

When great difficulty of either inserting the duct rod or removal of the cleaning mandrel is encountered, the duct may require further cleaning by use of a compressed air gun, or a low pressure water hose.

In the case of a broken duct line, the conduit shall be excavated and repaired as part of the item REPAIR AND REPLACE DAMAGED CONDUIT.

Method of Measurement. This Work will be measured in lineal feet for each conduit cleaned. Measurements shall be made from point to point horizontally. Vertical rises will not be measured.

Basis of Payment. This Work will be paid for at the contract unit price per lineal foot for ROD AND CLEAN DUCT IN EXISTING CONDUIT SYSTEM. When the number of cables to be installed require the use of more than one conduit in the same run, each additional conduit required shall be rodded and cleaned as a separate unit and paid for at the contract unit price.
(CTE – 10/15/2004)

REPAIR AND REPLACE DAMAGED CONDUIT

Description. This item consists of the repair and replacement of short segments of damaged or crushed conduit, needed to complete rewiring of a signalized intersection, as directed by the Engineer. Work shall include excavation of pavement or sidewalk, trenching, repair and replacement of the affected conduit using water-tight conduit splices, backfill of the trench, and restoration of disturbed pavement and sidewalk.

The costs of sidewalk removal and replacement work, pavement removal and replacement, and trench and backfill work, when incurred under this item, will not be measured for payment but shall be included in this item.

Before commencing repair and replacement, the Contractor shall submit a brief statement of the expected work method and effort for each section of damaged or crushed conduit to the Engineer. The actual work shall not take place until the Engineer approves the Contractor submittal.

Method of Measurement. The work paid for will be the number of lineal feet of conduit repaired, replaced, and accepted, measured in place. The length for measurement will be the distance horizontally between changes in direction of the conduit plus the conduit vertically attached to structure.

Basis of Payment. This Work will be paid for at the contract unit price per lineal foot for REPAIR AND REPLACE DAMAGED CONDUIT.
(CTE – 10/15/2004)

INTERCEPT EXISTING CONDUIT

Description. This item consists of intercepting an existing city conduit or conduits for the purpose of installing a new foundation, a new manhole or handhole, or making a connection to a new conduit.

General Requirements. Work under this item shall be performed in accordance with Section 800 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Construction Requirements. The Contractor shall carefully cut the conduit so that the cut conduit ends will be flush with the inside walls of the new manhole or handhole. Where existing cables are in service in the conduit(s) being intercepted, conduit(s) shall be carefully split so that all working cables are not interrupted. If conduit(s) are concrete encased, such concrete shall be removed as required. Any concrete encasement damaged during installation shall be restored as needed. No additional compensation shall be made for additional concrete. This item shall include all work necessary to bring the conduit into the manhole, handhole, or foundation, or to make the necessary connection to a new conduit. The Contractor shall furnish all materials for a complete installation.

Method of Measurement. This Work will be measured on a per each basis each for conduit end cut.

Basis of Payment. This Work will be paid for at the contract unit price per each for INTERCEPT EXISTING CONDUIT. No additional payment will be allowed for excavation, backfilling, and restoration of a parkway.
(CTE – 10/15/2004)

JUNCTION BOX, POLE OR POST MOUNTED

Description. This item consists of furnishing and installing a Junction Box on each traffic signal post, traffic signal pole, or street light pole on which a signal head is mounted, as shown on the plans or directed by the Engineer.

General Requirements. Perform work in accordance with Sections 801, 802, and 813 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Materials. The Junction Box shall conform to the requirements of BOE Material Specification 1407 and shall be mounted above and attached by four (4) #10-24x3/4" stainless steel screws, to a long sweep elbow, Leitelt Brothers Company Item Number LB-16-64-A-2, or equivalent. A stainless steel, sign mounting, banding bracket, BOE Drawing No. 11984, shall be attached to the center of the back of the box with a 5/16" x 1" stainless steel machine screw. The box shall contain a 20 conductor terminal strip, Marathon Special Products Corporation Catalog Number 36002, or equivalent, securely fastened to an Aluminum Terminal Block "Z" Bracket, Leitelt Brother Company Item Number LB-16-6-4B, or equivalent, mounted with two Number 8-24 x 1/2" stainless steel machine screws in tapped holes in the mounting bosses, and located 3/4 inches from the right side facing the open box.

Installation. The junction box, 16" high, 6" Wide and 4" deep shall be installed with appurtenances as shown on BOE Standard Drawing 834 and as described herein. The box and elbow shall be mounted on the side of the pole away from the roadway. The center of the box shall be located approximately fifty-eight inches (58") above the adjacent sidewalk. The long sweep elbow shall be properly positioned over a hole 1 1/2" in diameter drilled in the pole approximately 48" above the sidewalk, for the installation of the cable. The hole shall be reamed or filed to remove all sharp edges or burrs which might damage cable during installation, or through vibration when the signals are in operation. The box and elbows shall be banded to the pole with three (3) 3/4" stainless steel bands, one through the banding bracket and one each at the top and bottom of the elbow. The banding and clips shall have a baked-on black finish.

Color. Color shall be black as indicated on the plans. Color shall conform to City of Chicago Standards. A color sample will be submitted to the Engineer for approval prior to fabrication.

Method of Measurement. This Work will be measured on a per each basis.

Basis of Payment. This Work will be paid for at the contract unit price per each for a JUNCTION BOX, POLE OR POST MOUNTED. Connection of cables and wires to the terminal strip will not be part of the cost of the junction box but are included in the installation of underground cable and the installation of signal heads.
(CTE – 10/15/2004)

CLEAN EXISTING MANHOLE OR HANDHOLE

Description. This item consists of cleaning existing manholes or handholes for the installation of new conduit(s) and cable(s) or as directed by the Engineer.

General Requirements. Perform work in accordance with Section 801 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Installation. Relocate existing cable hooks and retrain existing cables as required prior to drilling the existing manhole or handhole. Remove any accumulation of silt, debris or foreign matter of any kind and dispose of off-site by the Contractor. Gas and water shall be pumped out. Water shall be filtered prior to discharge to a catch basin.

Coordination with ComEd for ComEd manholes or handholes, and coordination with the Bureau of Electricity for city electric manholes or handholes shall be performed by the Contractor prior to starting any work.

Drilling the existing manhole or handhole is not be included in this item and will be paid for under a separate pay item.

Method of Measurement. Each manhole or handhole that is cleaned will be counted as a unit for payment. Each manhole or handhole that is drilled will be measured for payment for cleaning only once.

Basis of Payment. This Work will be paid for at the contract unit price per each for CLEAN EXISTING MANHOLE OR HANDHOLE.

(CTE – 10/15/2004)

RACKING CABLES IN MANHOLE OR HANDHOLE

Description. This item consists of furnishing and installing racks and racking fiber optic cable in split duct and/or traffic signal and lighting copper cable around the inside perimeter of a manhole as shown on the plans and as directed by the Engineer.

In each manhole, the Contractor shall furnish and install at least four support brackets attached to the manhole walls, on which neatly coiled fiber optic cable in split innerduct and copper cable can be secured. The support brackets shall be attached firmly by screws drilled into the wall. Specific racking layout and components shall be provided in a submittal to the Engineer for each manhole, for review and approval in advance of installation.

In the event that a cable enclosure or other protective treatment of cable is used in place of racking on brackets at the direction of the Engineer, such alternate treatment shall be paid for as this item.

Method of Measurement. This Work will be measured on a per each basis each for manhole or handhole racked.

Basis of Payment. This Work will be paid for at the contract unit price per each for RACKING CABLES IN MANHOLE OR HANDHOLE.

(CTE – 10/25/2004)

TRENCH AND BACKFILL WITH SCREENING AND/OR SAND

Description. This item consists of excavating a trench for the installation of cables or conduits, and backfilling with limestone screenings or bank sand in paved areas as shown on the plans and or as directed by the Engineer.

General Requirements. Perform work in accordance with Section 801, 802, and 815 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

The bottom of the trench shall be tamped, and the trench inspected by the Engineer before cable or conduit is placed in the trench.

Conduit and cable shall not be installed by plowing in lieu of trench and backfill. Conduit or cable installation performed by the plow method will not be measured for payment.

All trenches shall be backfilled as soon as possible after the installation of the conduit or cable. Any material excavated from the trenches that in the opinion of the Engineer is satisfactory backfilling material, may be used for backfilling above the layer of limestone screenings or sand. The limestone screenings or sand shall be used to fill the bottom of the trench to a depth of 12 inches above the top of the conduit or cable. Cinders, rocks, or other inappropriate materials will not be permitted to be used as backfilling material.

Method of Measurement. This Work will be measured in feet along the centerline of the trench, with conduit or cable in place.

Horizontal boring made for the purpose of placing conduit or cable under pavement, sidewalks, tree roots, or driveways will not be measured for payment.

Basis of Payment. This Work will be paid for at the contract unit price per foot for TRENCH AND BACKFILL WITH SCREENINGS AND/OR SAND.

The costs for horizontal boring and disposal of all surplus excavated material shall be included in the cost of trench and backfill.

(CTE – 10/25/2004)

CABINET WORK, SPLICING, TESTING AND MISC.

Description. This item consists of furnishing, installing, and testing fiber optic cable splice and splice enclosures, optical connectors, single mode/multimode convertors, pigtailed and patch panels, hardware, and software as required for a fully operational communication system that provides all the features and functions identified herein and shown on the plans.

General Requirements. Perform work in accordance with Section 802 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code.

The interconnect communications system shall accommodate present and future data, voice and video transmission requirements for the City of Chicago. The communications layout is shown in the plans.

Materials.

Optical Splice/Splice Enclosure:

1. All permanent optical splices shall be of the fusion type.

A factory fabricated fusion splice kit containing materials necessary for quality fusion splicing shall be used for each fiber splice.

Splices made with the factory fabricated single mode fusion splice kit shall be capable of achieving not more than 0.1 dB loss at 1310 nm.

Splices made with the factory fabricated multimode fusion splice kit shall be capable of achieving not more than 0.1 dB loss at 850 nm.

An emergency restoration kit shall be provided to perform temporary splices. This kit shall include all necessary tools and materials to perform mechanical splices. Each mechanical splice kit shall be capable of achieving not more than 0.5 dB loss at any wavelength.

2. The outdoor optical splice enclosure shall be capable of aerial, duct, or buried applications.

The splice enclosure shall consist of an outer enclosure, an inner enclosure, and splice trays.

The splice enclosure shall be suitable for application in the temperature range of -40°C to $+70^{\circ}\text{C}$.

The splice enclosure shall provide space allowing entry of fiber optic cable without exceeding the minimum bend radius of the cable.

The splice enclosure shall be capable of through, branch, or mid-span type splice locations.

The splice enclosure shall be designed to permit selective fiber splicing (looping an interconnect cable in and out while only cutting into the desired fibers).

The splice enclosure shall allow splicing of all fibers up to the maximum number specified on the plans.

The outer enclosure shall be waterproof and re-enterable and shall utilize an encapsulant between the inner and outer enclosure to prevent the ingress of moisture.

The Contractor shall furnish and install splices and splice enclosures adjacent to the cabinets at the locations indicated on the plans and as specified herein.

Fiber Patch Panel:

Fiber Patch Panels (FPPs) shall be furnished and installed at the locations shown on the plans.

The optical patch panel shall terminate outside plant fiber pigtailed. The FPP shall allow termination of a fiber patchcord to interconnect outside plant fibers to optical modems.

The approved type optical connectors on the end of each pigtail shall screw into a sleeve securely mounted to a patch panel within the controller cabinet. The maximum optical loss across the connection shall not exceed 0.25 dB.

The FPP shall be a surface mount panel as per BOE Drawing No. 909.

Optical Patch Cords And Pigtails:

Optical patch cords shall consist of a section of single fiber jacketed cable equipped with optical connectors at both ends. Patch cords for connections from FPPs to optical devices or other patch panels shall be equipped with factory installed connectors on both ends.

The optical pigtail shall consist of multiple fibers, factory connectorized on one end, suitable for installation in an outdoor duct run. Each fiber shall be individually jacketed, with aramid yarn fibers between the fiber and the subjacket. The fibers shall then be contained in a medium density polyethylene outer jacket. The multi-fiber pigtail shall be provided with eight (8) or twelve (12) multimode fibers or eight (8) single-mode fibers as required for the particular application. The hybrid fiber pigtail shall consist of eight (8) singlemode fibers and eight (8) multimode fibers.

The factory installed connectors furnished as part of optical patch cords and pigtails shall meet or exceed the requirements for approval of connectors specified herein.

The fiber portion of each patch cord and pigtail shall be a single, jacketed fiber with optical properties identical to the optical cable furnished under this Contract.

The cable shall be suitable for installation in outdoor manholes with water and/or ice.

Each jacketed fiber shall have a tensile strength in excess of 50 lbs.

Optical Connectors:

All permanent connector installations at traffic signal controller cabinets shall utilize factory installed and tested connectors on pigtails. Field installed connectors shall be allowed only at the indoor termination for connection to fiber optic modems.

The optical connectors furnished shall be uniform throughout this Contract. In the event that different types of connectors are necessary for the classification of modems supplied, a plan shall be submitted to the Engineer for approval for the use of one type of connector (for each fiber type) universally.

All single-mode connectors on equipment, patchcords, pigtails or panels shall be SC type or approved equivalent.

All multimode connectors on equipment, patchcords, pigtails or panels shall be ST compatible or approved equivalent.

The connectors shall meet, as a minimum, the following specifications:

Attenuation	≤0.4 dB
Tensile Strength	10 lbs. (Single fiber cable w/ strength member)
Durability	less than 0.3 dB change
Temperature Cycling	-40°C to +75°C, 40 cycles
Return Loss	Greater than 40 dB
Fiber Diameter	125 μm O.D., nominal

Installation.

The fiber optic cable shall be brought into each FPP as follows:

Fiber Optic Cable (Single Mode, Multi-Mode and Hybrid): The hybrid cable shall be brought into the manhole adjacent to each controller cabinet as shown on the plans, and fifty feet (50') of cable slack shall be coiled in the manhole.

The fibers of the hybrid cable shall be spliced in the manhole as shown on the plans. A factory connectorized, multi-strand, jacketed pigtail shall be fusion spliced to the active fibers in the cable for the respective cabinet. The remaining fibers in the cable shall not be cut and shall pass through the manhole. The pigtail shall be installed in conduit from the splice enclosure to the controller cabinet, unless otherwise noted, and shall be terminated on the fiber patch panel.

The fiber pigtail shall terminate in the controller cabinet within a fiber patch panel (FPP). The size of the FPP shall be sufficient to accommodate all fibers and connectors from the fiber pigtail. The location of the FPP shall not restrict access to other controller components. The fiber pigtail shall be firmly secured to the FPP using the manufacturer's recommended procedures or as directed by the Engineer.

Testing.

Testing of fiber optic cable shall be as follows:

1. Manufacturer's Factory Tests. The Contractor shall furnish data showing that each finished and installed fiber optic cable segment is traceable to the test data on file for each step in its manufacturing process.

The Engineer will make inspections and tests as are necessary to determine if the cable meets the requirements of this Special Provision. The Engineer will have the right to reject cable which is defective in any respect.

The Engineer will be given ten (10) working days, advance notice of the date the cable will be ready for final testing so that the Engineer may be present at the tests.

Physical tests shall be made on samples selected at random at the place of production. Each test sample shall be taken from the accessible end of different reels. Each reel selected and the corresponding sample shall be identified. The number and lengths of samples shall be specified for the individual test. All applicable tests for the cable materials and cable construction specified shall be performed.

Optical tests shall be made on the entire length of each continuous fiber provided within each fiber optic cable. Each test shall be completed during manufacture as required, and again prior to shipping, after the cable is secured to the reel in final shipping packaged form.

The manufacturer shall provide, at the point of production, apparatus and labor for making any or all of the following tests under the supervision of the Engineer, to include, but not be limited to:

Tensile Strength
Impact Resistance, Crushing, and Flexing
Optical Attenuation
Optical Spectral Dispersion
Optical Time Domain Reflectometry (OTDR)

2. Installed Field Tests. Testing of installed fiber optic cable shall be performed after complete installation and termination of the cables.

The Contractor shall notify the Engineer in writing five (5) working days in advance of the testing of the cable so that the Engineer, or his/her representative, may be present for the tests, if the Engineer so elects.

Optical testing shall be performed on all fibers within each cable, including those extra fibers which the Contractor elects to include above those invoiced, in order to meet the 100 percent fiber quality warranty.

Testing shall be performed on the fibers, as terminated on the FDPs or FPPs.

All necessary test equipment shall be provided by the Contractor to perform tests to include, but not be limited to, the following:

- a) Optical attenuation at 1310 and 1500 nm for single mode fibers and 850 nm and 1300 nm for the multimode fibers.
- b) Optical Time Domain Reflectometer (OTDR) records (labeled and identified), either photographic or computer printer/plotter output. Test shall be conducted for both directions of transmission. All OTDR tests shall be made with an OTDR approved by the Engineer.

Method of Measurement. This Work will be measured on a per each basis.

Basis of Payment. This Work will be paid for at the contract unit price per each for CABINET WORK, SPLICING, TESTING, AND MISC.

(CTE – 10/25/2004)

CONTROLLER, TRAFFIC, 16 LOAD BAY, P CABINET

Description. This item consists of furnishing and installing a traffic signal controller and associated equipment in a cabinet onto a foundation and making all necessary connections.

General Requirements. Perform work in accordance with Sections 802 and 857 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Material. The material must meet the requirements of BOE Material Specification 1469. The cabinet shall be a P cabinet 55 inches high by 44 inches wide by 26 inches deep with 16 load bays. Each load bay shall include a load switch. No communications interface equipment shall be included.

Installation Requirements. The controller shall be enclosed in a housing and installed in a completely wired cabinet. The model and serial numbers of the controller shall be affixed on the front of the controller housing and be readily visible. The cabinet shall be set onto a pad foundation designed specifically for the cabinet, and affixed with four bolts provided with the foundation.

The controller shall be programmed to provide the sequencing and timing of operation as shown on the plans. Electric cables inside the cabinet shall be neatly trained along the base and back of the cabinet. Each conductor used shall be connected individually to the proper terminal, and the spare conductors shall be insulated and bound into a neat bundle. Each cable shall be marked with suitable identification and recorded on a copy of the plans for the intersection and submitted to the Engineer. Signal indications for each direction shall be wired to a separate circuit whether or not the signal plans call for a split movement. Maximum load per signal circuit shall be set not to exceed 700 watts. Final offset timing of the time base coordinator will be set in the field by City personnel.

All conduit entrances into the cabinet must be sealed with a pliable waterproof material to restrict moisture entrance into the cabinet.

Color. Color of the exterior surfaces of the cabinet must be black unless otherwise noted on the plans and directed by the Engineer. Color must conform to City of Chicago Standard Specifications. A color sample must be submitted to the Engineer for approval prior to fabrication.

Method of Measurement. Each Controller will be measured on a per each basis as installed and accepted by the Engineer and the Bureau of Electricity.

Basis of Payment. This Work will be paid for at the contract unit price each for CONTROLLER, TRAFFIC, 16 LOAD BAY, P CABINET, which will be payment in full for the material and work described herein.

(CTE – 10/15/2004)

STAR MODEM

Description. This item consists of furnishing and installing an external star modem and associated communications connections in controller cabinets as shown on the plans or directed by the Engineer.

Materials. The external star modem shall be fully compatible with the internal fiber optic modems in the system master and local controllers, and shall be located within the controller cabinet. The star modem shall be capable of splitting multimode signals into three or more directions while maintaining the multi-drop, polling operation of the closed loop system.

Installation Requirements. Additional electric and fiber optic cables inside the cabinet shall be neatly trained along the base and back of the cabinet. Each conductor used shall be connected individually to the proper terminal and the spare conductors shall be insulated and bound into a neat bundle. Each cable shall be marked with suitable identification.

Method of Measurement. This Work will be measured on a per each basis.

Basis of Payment. This Work will be paid for at the contract unit price each for STAR MODEM, which price will be payment in full for material and work described herein. The price will also include all fiber jumper cables, wiring and connections to the star modem.

(CTE – 10/15/2004)

TRANSCEIVER, FIBER OPTIC

Description. This item consists of furnishing and installing a fiber optic transceiver that is fully compatible with the LMD-40 pretimed controllers specified elsewhere in these Special Provisions.

General Requirements. Perform work under this item in accordance with Section 864 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Code, except as herein modified.

Fiber Optic Communications Module. The fiber optic communications module shall be a Peek LMC-4 Internal Multi-Mode Fiber Optic Modem or approved equal identical to those supplied with the pretimed controllers. The module shall be internal to the LMD-40 series controller. It shall communicate at up 4800 baud at a wavelength of 850 nm. The module shall utilize industry standard ST compatible connectors for the primary (receive) and secondary (transmit) ports to provide full-duplex operation.

Method of Measurement. This Work will be measured on a per each basis.

Basis of Payment. This Work will be paid for at the contract unit price each for TRANSCEIVER, FIBER OPTIC. Such price will include the cost of furnishing the unit complete with all documentation, hardware and accessories necessary for proper operation.

(CTE – 10/15/2004)

ELECTRIC CABLE IN CONDUIT NO. 12, 19/C

Description. This item consists of furnishing and installing electric cable in conduit for traffic signals of the type, size and number of conductors as specified on the plans.

General Requirements. Perform work in accordance with Sections 802, 817, and 873 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Materials. All cable shall conform to the requirements of BOE Material Specification 1474, for Traffic Signal Cable.

Installation Requirements. All cable shall be installed in conduit, as indicated on the plans, with care to prevent damage to the insulation or cable. Suitable devices shall be used in pulling the cable, and only approved lubricants shall be used. All cables installed in conduit will be from the power source to the traffic signal controller, from the traffic controller to the City traffic signal junction box, or from junction box to junction box. Cables that terminate in a traffic signal controller or traffic signal junction box shall extend two inches (2") above the bottom of the box, or cabinet, and the following procedure shall be followed:

Controllers.

- (1) Remove thirty six inches (36") of neoprene jacket.
- (2) Wrap vinyl electrical tape on two inches (2") of the neoprene jacket and two inches (2") on the exposed conductors.
- (3) Remove one inch (1") of insulation and scrape copper conductor.
- (4) Train cables neatly along the base and back of cabinet.
- (5) Connect conductors to proper terminal lugs.

Traffic Signal Junction Box.

- (1) Remove twenty four inches (24") of neoprene jacket.
- (2) Wrap vinyl electrical tape on two inches (2") of the neoprene jacket and two inches (2") on the exposed conductors.
- (3) Remove one inch (1") of insulation and scrape copper conductor.
- (4) Train cables neatly along the side and back of the box.
- (5) Connect all conductors to terminal strip.

Slack Cable. The length of cable slack shall be provided in accordance with the following schedule:

<u>Location</u>	<u>Length of Slack Cable (feet)</u>
Base of Controller Post	1
Detector, Junction Box	1
Base of Traffic Signal Post or Traffic Signal Pole	2
City Handhole	6
City Manhole	12
Commonwealth Edison Manhole	25

Cable slack in manholes/handholes shall be trained and racked in the holes. If racks are non-existent, racks shall be provided, which will be a part of a separate pay item.

No cable splices shall be allowed for traffic signal cable.

Method of Measurement. This Work will be measured horizontally between changes in direction, plus slack cable of the length shown above. Vertical cable will not be measured for payment.

Basis of Payment. This Work will be paid for at the contract unit price per lineal foot for ELECTRIC CABLE IN CONDUIT NO. 12, 19/C.

(CTE – 10/25/2004)

FIBER OPTIC HYBRID CABLE IN CONDUIT 6SM/6MM

Description. This item consists of furnishing and installing fiber optic cable in an innerduct within a conduit, as shown on the plans or as directed by the Engineer.

Material. The cable shall meet the requirements of BOE Material Specification 1482.

Overview. The Dan Ryan Phase II Frontage Road (Wentworth/Wells) traffic signal interconnect system shall consist of one closed loop system. The following is a list of intersections included in the closed loop system.

Closed Loop System

1. Wentworth and 47th.
2. Wells and 47th.
3. Wentworth and 51st.
4. Wells and 51st.
5. Wentworth and 55th.
6. Wells and 55th.
7. Wentworth and 57th.
8. Wells and 57th.
9. Wentworth and 59th.
10. Wells and 59th.
11. Wentworth and 63rd.
12. Wells and 63rd.

51st Street bridge intersection with Wentworth Avenue and Wells Street will be interconnected as part of this Contract. 47th, 55th, 57th, 59th, and 63rd bridge intersections with Wentworth Avenue and Wells Street will have their own individual interconnect contracts.

As part of a separate contract, the above intersections will be ultimately interconnected to a master controller at northeast corner of eastbound Garfield and Wentworth forming a single closed loop system.

The controllers at above intersections shall use an RS-232 interface to transfer data from the controller to a fiber optic modem. The optical modems shall operate in a drop-and-insert configuration, where each modem receives (drop) or transmits (insert) information relative to that local site. In addition, the modem shall regenerate signals from down stream modems with no loss of data or degradation of performance. This is also known as a daisy-chained configuration.

General Requirements.

Hybrid Fiber Optic Cable. The cable shall meet, as a minimum, the following specifications and conform with the latest issue of Bellcore TR-TSY-00020: Generic Requirement for Optical Fiber and Optical Fiber Cables. ANSI/EIA-472: Generic Specification of Fiber Optic Cables, and REA-PE-90; and appropriate Sectional Specifications thereof.

Cable Construction.

Cable construction, other than as specified, shall be approved by the Engineer.

1. The cable shall be constructed entirely from dielectric material.
2. A cable suitable for either direct installation into a duct bank or conduit shall be supplied.
3. The cable shall be of gel-filled, loose tube construction with up to 12 buffer tubes wrapped around a dielectric central strength member. All fiber(s) shall be contained within buffer tubes, and each buffer tube shall have an inside diameter much greater than the total diameter(s) of the fiber(s) it supports.
4. Each fiber or group of fibers shall be free-floating within the tubes such that all mechanically or environmentally induced stress placed upon the cable is de-coupled from the fibers. The air within the buffer tubes shall be displaced with a gel to prevent entry by water and to facilitate free movement of the fiber(s) within.
5. The buffer tubes shall be color coded in compliance with EIA/TIA-598: Color Coding of Fiber Optic Cables.
6. Cables constructed of less than six fibers shall have a buffer tube provided for each fiber: cables constructed of more than six fibers may have several fibers occupy a buffer tube, with equal distribution of fibers as far as practicable. All fibers shall be color coded in compliance with EIA/TIA-598: Color Coding of Fiber Optic Cables. Single-mode and multimode fibers shall not occupy the same buffer tube.
7. In buffer tubes containing multiple fibers, the colors shall be stable during temperature cycling and not subject to fading or smearing onto each other or into the gel filling material. Colors shall not cause fibers to stick together.
8. The cable shall have an interstitial filing between the buffer tubes and throughout the remainder of the cable to prevent entry of water.
9. A binder wrapping strength member of aramid fibers shall be provided as a final layer prior to application of the outer jacket.

10. The cable shall be provided in continuous lengths. Each fiber shall be pulled from the same optical waveguide form and shall be free of splices. Each optical fiber shall consist of a doped silica core surrounded by a concentric silical cladding: the use of any other material shall be approved by the Engineer.
11. A permanent marking shall be employed on the outer jacket of the cable which shall show the date of manufacture and the manufacturer's name. A numerical sequence shall be marked on the outer jacket, at intervals no greater than ten (10) feet, to facilitate determination of length of cable and amount of cable remaining on the reel. The height of the marking shall be 2.5 mm nominal.
12. All optical fibers shall be proof tested by the fiber manufacturer at a minimum load of 100 kpsi.
13. All optical fibers shall be 100% attenuation tested at the factory for compliance with performance specifications described herein. The attenuation of each fiber shall be provided with each cable reel.
14. The outer jacket shall be constructed of medium density polyethylene, minimum jacket thickness of 1.4 mm. Jacketing material shall be applied directly over the tensile strength members and flooding compound. The outer jacket shall be UV and fungus resistant.

Singlemode Optical Specifications.

1. Optical Specifications:	
Operation Wavelength	1,300 nm and 1,550 nm
Optical Attenuation	@ 1,300 nm: 0.7 dBI/km @ 20C @ 1,550 nm: 0.6 dB/km @ 20C
Optical Dispersion	@ 1,300 nm: 3.5-4.5 psec/nm-km @ 1,550 nm: (</=) 20 psec/nm-km
Zero Dispersion Wavelength	1,300 to 1,320 nm. Nominal
Zero Dispersion Slope	<=0.092 ps/nm ² -km
Fiber Core Diameter	8.3 um. Typical
Fiber Coating Diameter	250+/-10 um
Fiber Cladding Diameter	125+/-2 um
Core to Cladding Offset	<=0.8 um
Cladding Non-Circularity	<=1.0%
Spot Size	9.3+/-0.5 um @ 1300 nm 10.5+/-1 um @ 1550 nm
Cutoff Wavelength	<=1250 nm

Multimodal Optical Specifications.

1.	Optical Specification:	
	Operation Wavelength	850 nm and 1.300 nm
	Optical Attenuation	@ 850 nm: 400 MHZ-km @ 20C @ 1,300 nm: 400 MHZ-km @ 20C
	Fiber Core Diameter	62.5 um +/-3.0 um
	Fiber Coating Diameter	250 +/-15 um
	Fiber Cladding Diameter	125 +/-2.0 um
	Core to Cladding Offset	<=3.0 um
	Cladding Non-Circularity	<=2.0%
	Core Non-Circularity	<=6.0%
	Numerical Aperture	0.275+-0.015
	Index	Graded Index

Hybrid Cable Mechanical Specifications.

Crush Resistance	5,000 n/m. Length of cable
Cable Outside Diameter	0.50" nominal
Minimum Bending Radius:	
Installation	20 times the cable diameter
Static	10 times the cable diameter
Temperature:	
Installation	-30C to +70C
Storage/Operation	-40C to +70C
Humidity	0 to 100%
Tensile Strength:	
Installation	2,700 N (600 ibf)
Static	600 N (135 ibf)

Installation. Cable shall be pulled through the conduit or innerduct as shown on the plans, or as directed by the Engineer. The manufacturer's instructions shall be carefully followed so as not to damage the cable. After the cable is pulled, traces shall be obtained from the installed cable using an OTDR (Optical Time Division Reflectometer) to insure that the cable is good. A bad trace will require that new cable be installed.

Method of Measurement. The cable will be measured per foot installed, and will include slack. Splicing and terminating fiber optic cable will be covered by different items.

Basis of Payment. This Work will be paid for at the contract unit price per foot for FIBER OPTIC HYBRID CABLE IN CONDUIT 6SM/6MM, which will be payment in full for the material and work described herein.

(CTE – 10/25/2004)

TRACER CABLE

Description. This item consists of providing a trace cable (copper #10) with fiber optic cable in conduit for the purpose of locating a utility.

General Requirements. This Work shall be in accordance with Section 871 Standard Specifications and the City of Chicago Bureau of Electricity, except as herein modified.

Method of Measurement. The length of measurement will be the distance horizontally measured between changes in direction.

Basis of Payment. This Work will be paid for at the contract unit price per lineal foot for TRACER CABLE, which will be payment in full for the material and work described herein.

(CTE – 10/15/2004)

POLE STEEL, ANCHOR BASE

Description. This item consists of furnishing, installing a steel anchor base pole to which equipment may be attached for the extension of the City street light and traffic signal systems.

General Requirements. Perform work under this item in accordance with Sections 800, 877, and 830 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Materials. The pole shall meet the requirements of BOE Material Specification 1447.

Installation Requirements. The pole shall be installed on the concrete foundation designed for the particular pole usage as indicated on the plans or as directed by the Engineer. Double nut construction shall be used as shown on BOE Drawing No. 837. Double nut construction provides the proper ventilation, as well as providing a way to plumb the pole. Any exposed portions of anchor rods extending above the nuts which interfere with the installation of the bolt covers shall be cut off to provide the necessary clearance. The excess shall not be burned off. The pole shall be set secure, properly orientated, and plumb using the nuts and washer provided with the anchor bolts. The bolt covers, handhole cover, and pole cap shall be securely attached.

Painting. The pole shall be delivered completely finished with a factory applied powder coat paint system. The Contractor shall utilize non-abrasive slinging materials and shall exercise due care in erecting the pole and mast arm to minimize any possible damage to the finish. When necessary, the Contractor shall use factory approved touch-up materials and methods to restore the finish to like new appearance and durability.

Color. Color shall be black conforming to City of Chicago Standard Specifications. A color sample shall be submitted to the Engineer for approval prior to fabrication.

Method of Measurement. This item will be measured per each unit installed, complete with anchor bolt covers, pole cap, and handhole cover.

Basis of Payment. This Work will be paid for at the Contract unit price each for POLE, STEEL, ANCHOR BASE, of the type, length, diameter and gauge indicated, which will be payment in full for the material and work described herein. Light standard foundations, mast arms, and luminaires will not be included in this pay item but will be paid for separately.
(CTE – 10/25/2004)

CONCRETE FOUNDATION

Description. This item consists of furnishing and installing concrete foundations at the locations shown on the plans or as directed by the Engineer. Work includes drilling of foundation shaft, furnishing and installing assemblies of steel reinforcing bars, anchor bolt assemblies and electrical conduit and bushings; swabbing and clearing the electrical conduits; and furnishing, placing and finishing concrete foundations.

General Requirements. Perform work in accordance with Sections 836 and 878 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Materials. Anchor bolts shall conform to BOE Material Specification 1467.

Construction. Twenty-four inch diameter foundations shall conform to BOE Drawing No. 818.

The top surface of these foundations shall be set at an elevation of two inches (2") above grade or as directed by the Engineer. Care shall be taken to install a level foundation and to provide adequate anchor rod projections for double-nut installation. The foundations shall be centered back from the face of the curb as shown on the plans.

Foundation raceways shall consist of large radius conduit elbow(s) in quantity, size and type shown on the plans. The elbow ends above ground shall be capped with standard conduit bushings. The foundation top shall be chamfered 3/4 of an inch.

Anchor bolts shall be set so that when poles are mounted on the foundations, the street lighting mast arm shall be properly oriented as indicated on the plans. The anchor bolts shall be set by means of a metal template which shall be submitted for approval before any foundation work is begun. The template shall hold the bolts vertical, and in proper position, and shall serve as a form for the top six (6) inches of the periphery of the foundation.

Ground Rods.

1. Ground rods for roadway lighting foundations shall be 3/4" x 10' in size which will be paid as a separate item.
2. Ground rods for traffic signal foundations shall meet BOE Material Specification 1465, which will be paid as part of foundation.

Method of Measurement. This item will be measured for payment in feet of the foundation in place. Extra foundation depth, beyond the directive of the Engineer, will not be measured for payment.

Basis of Payment. This Work will be paid for at the contract unit price per foot of CONCRETE FOUNDATION, of the type, diameter, and anchor rods size indicated.
(CTE – 10/25/2004)

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT

Description. This item consists of removing the existing traffic signal equipment including lighting mast arm, luminaires, and traffic signal cables at the intersections listed on the plans.

General Requirements. Perform work in accordance with Sections 800 and 1086 of the Standard Specifications, Bureau of Electricity Standards, and the City of Chicago Electrical Code, except as herein modified.

Delivery to City. The traffic control items, except for traffic signal cable, are to be removed and remain the property of the City of Chicago. The Contractor shall deliver the traffic signal equipment to the City of Chicago Yard at 4101 South Cicero Avenue, Chicago, Illinois. Twenty four hour advance notice is necessary before delivery. The traffic signal cable shall be removed and become the property of the Contractor and shall be disposed of by him, outside the right-of-way, at his sole expense. The cost of cable removal shall be included in this item.

The Contractor shall provide three (3) final copies of State's form(s) GF-2, listing the quantities and type of equipment that is to remain the property of the City, including model and serial numbers where applicable. He shall also provide a copy of the Contract Plan, or special provisions, showing the quantities and type of equipment. The Contractor shall be responsible for the condition of the traffic control equipment from the time of removal until its acceptance by a receipt drawn by the City indicating that the items have been returned in good condition.

Method of Measurement. Removal of existing traffic signal equipment will be counted as lump sum.

Basis of Payment. This Work will be paid for at the contract lump sum price for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT.
(CTE – 10/15/2004)

RELOCATE EXISTING LUMINAIRE AND MAST ARM

Description. This item consists of removing and relocating an existing street lighting luminaire and mast arm as specified herein, as shown on the Plans or as directed by the Engineer.

General Requirements. General requirements shall be in accordance with Sections 801 and 844 of the Standard Specifications and in accordance with the Bureau of Electricity Standards and the City of Chicago Electrical Code, except as herein modified.

Removal. The existing luminaire and mast arm shall be disconnected and removed from the existing traffic signal pole by removing the mounting bolts and lifting the mast arm off of the attachment brackets.

The existing street lighting cables shall be pulled back to the nearest manhole/handhole and coiled for reuse.

Any damage sustained to the luminaire and mast arm during removal operations shall be repaired, or replaced in kind, to the satisfaction of the Engineer at the Contractor's expense.

Reinstallation. The luminaire and mast arm shall be installed immediately on a new pole. The electrical cables shall be connected to power supply cables so the reinstalled luminaire and mast arm becomes operational the evening without interruption. Temporary wiring will be permitted at the discretion of the Engineer.

The existing street lighting cables coiled in the manhole/handhole shall be reinstalled in the new conduit to the new pole location and reconnected. This work shall be included in this pay item.

If the existing lighting circuit cables do not have sufficient slack to reconnect the reinstalled lighting unit at the new pole location, the Contractor shall provide new cables as required to reconnect the lighting circuit to satisfaction of the Engineer and the Bureau of Electricity. The work to provide the new cables shall be included in this pay item a separate payment will not be made.

Method of Measurement. Each luminaire and mast arm combination that is removed and relocated as indicated and accepted by the Engineer and the Bureau of Electricity will be counted as a unit for payment.

Basis of Payment. This work will be paid for at the contract unit price each for RELOCATE EXISTING LUMINAIRE AND MAST ARM.
(CTE – 10/25/2004)

RELOCATE EXISTING ILLUMINATED SIGNS, TRAFFIC SIGNAL AND PEDESTRIAN HEADS

Description. This item consists of removing and relocating existing illuminated signs, traffic signal and pedestrian heads as specified herein, as shown on the Plans or as directed by the Engineer.

General Requirements. General requirements shall be in accordance with Sections 800 and 895 of the Standard Specifications and in accordance with the Bureau of Electricity Standards and the City of Chicago Electrical Code, except as herein modified.

Removal and Relocation. The existing illuminated signs, traffic signal and pedestrian heads shall be disconnected and removed from the existing signal pole and relocated to a new pole. The installation of these signal items shall be in accordance with the BOE drawings 834, 835, and 837.

Any damage sustained to these shall be repaired or replaced in kind to the satisfaction of the Engineer at the Contractor's expense.

Except for traffic signal cable (No. 12 19C) which will be paid for as a separate item, any cable, including but not limited to mounting devices, connections, materials and labor, required to complete the reinstallation, shall be included in this item.

Method of Measurement. Relocate Existing Illuminated Signs, Traffic Signal and Pedestrian Heads will not be measured for payment.

Basis of Payment. This work will be paid for at the contract lump sum price for RELOCATE EXISTING ILLUMINATED SIGNS, TRAFFIC SIGNAL AND PEDESTRIAN HEADS.

(CTE – 10/25/2004)

BUREAU OF ELECTRICITY SPECIFICATIONS

Specification No:

- 1407 - POLE MOUNTED CAST ALUMINUM BOXES FOR TRAFFIC SIGNALS AND FIRE ALARM TERMINALS
- 1447 - POLE: ANCHOR BASE, 3 AND 7 GAUGE, TAPERED TUBULAR STEEL, WITH HANDHOLE ENTRY
- 1462 - RIGID STEEL CONDUIT (HOT DIPPED GALVANIZED)
- 1465 - GROUND RODS
- 1467 - ROD: ANCHOR, STEEL, WITH HARDWARE
- 1469 - TRAFFIC SIGNAL CONTROLLER AND CABINET LOCAL AND MASTER TYPES
- 1474 - CABLE: MULTIPLE CONDUCTOR, COPPER WIRE, 600 VOLT, ETHYLENE PROPYLENE RUBBER INSULATION, HYPALON JACKET
- 1482 - CABLE: TELECOMMUNICATIONS HYBRID FIBER OPTIC

**SPECIFICATION 1407
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
MARCH 15, 1995**

**POLE MOUNTED CAST ALUMINUM BOXES FOR TRAFFIC
SIGNALS AND FIRE ALARM TERMINALS**

SCOPE

This specification states the requirements for pole mounted, cast aluminum junction boxes to be used as enclosures for traffic signal and fire alarm multiple cable terminals.

GENERAL

- (a) Specifications. The junction boxes must conform in detail to the requirements herein stated, to the Federal Standard cited by number, and to the Specifications and Methods of Test of the American Society for Testing Materials cited by ASTM Designation Number, of which the most recently published revisions will govern.
- (b) Drawings. The drawing mentioned herein is a drawing of the Department of Streets and Sanitation, Bureau of Electricity, and will be interpreted as part of these specifications.
- (c) Acceptance. Junction boxes not conforming to this specification will not be accepted.
- (d) Sample. One complete junction box of the manufacture intended to be furnished must be submitted within fourteen (14) business days after request by the Department of Streets and Sanitation, Bureau of Electricity. If the bidder supplying the sample is awarded a contract, the referenced sample will be credited as part of the order if it meets all requirements of this specification.
- (e) Workmanship. All junction boxes must be free of casting flaws and must have neat, smooth exterior surfaces. All holes must be accurately located and drilled to ensure interchangeability of all components.

DESIGN

- (a) Drawing. The junction box must conform in detail to the dimensions and requirements shown on drawing number 832.
- (b) Material. The body door and plate must be castings of non-heat treated aluminum silicon alloy conforming to ANSI alloy 443.0 of ASTM B26.

DETAIL REQUIREMENTS

- (a) **Assembly.** Each junction box must consist of the body, door with its gasket, flat plate with its gasket, terminal block mounting bracket and bottom gasket with its stainless steel hardware furnished as described below, all completely assembled, painted and ready for installation.
- (b) **Body.** The body must be cast as shown in drawing number 832. The top and bottom sides of the box where flat plates, or other fittings, will be attached, must be identically cast, machined flat, and drilled and tapped in accordance with dimensions shown. All fittings which fit on the top side must fit on the bottom side.
- (c) **Door.** The door must be cast as shown in drawing number 832. The door must be hinged at the left with stainless steel hinge pins and must open not less than 180 degrees to permit complete access to interior of the junction box. Two stainless steel Allen head machine screws, undercut and held captive, must hold the door closed and maintain positive pressure against a sponge neoprene gasket cemented in place completely around the door jamb. The door must be finished and painted prior to cementing the gasket into its groove in the door.
- (d) **End Plate.** A flat end plate must be furnished with each body casting. The plate must be drilled to align with tapped holes in the body casting and have a flush match with the periphery of the top and bottom body casting pads. The plate must have a properly fitted gasket and be held in place by four (4) stainless steel machine screws.
- (e) **Mounting Bracket.** A terminal block mounting bracket, as shown on drawing number 832, must be furnished and installed in each junction box. The bracket must be cast from ANSI alloy 443.0 per ASTM B26.
- (f) **Gaskets.** The gasketing between the body and the door must be of sponge neoprene and must be cemented in place after painting of the door. A cork gasket, 1/8 inch thick, must be used between the end plate and the body of the junction box on the top end and held in place by four (4) stainless steel screws. An identical cork gasket and four (4) stainless steel screws must be placed in a 6" x 4" metal fold kraft envelope, 32 sub., and placed within the box before shipping. This gasket with its screws will be used with the fitting used on the bottom end of the box.
- (g) **Hardware.** The hinge pins and all screws required for assembly of this junction box must be of stainless steel.
- (h) **Painting.** The exterior surfaces of the junction box must be properly cleaned and given one (1) coat of zinc chromate primer containing ten percent (10%) iron oxide and one (1) coat of green enamel. The color of the enamel must be green number 14110 of Federal Standard number 595. The primer and enamel must be of an approved grade and quality.

- (i) Packing. After the paint is thoroughly dry, and the junction boxes have been assembled, they must be suitably packed to prevent damage to painted surfaces during shipping and handling. All shipments must be fastened to, and shipped on, 48" x 48" hardwood, 4 way, non-returnable pallets. Total height must not exceed 64" and total weight must not exceed 2,000 pounds.

INSPECTION

An inspector representing the City of Chicago must have free access, at all times while work on these junction boxes is being performed, to all parts of the manufacturer's work which are concerned with their manufacture. The manufacturer must afford the inspector, without charge, all reasonable facilities to satisfy him that the junction boxes are being furnished in accordance with this specification. The final inspection must be made at the point of delivery. Any junction boxes rejected must be removed and disposed of by the Contractor at his sole expense.

THIS SPECIFICATION MUST NOT BE ALTERED

**SPECIFICATION 1447
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
REVISED OCTOBER 3, 2001**

**POLE: ANCHOR BASE, 3 AND 7 GAUGE,
TAPERED TUBULAR STEEL, WITH HANDHOLE ENTRY**

SUBJECT

1. This specification states the requirements for tapered, tubular, 3 gauge and 7 gauge steel anchor base poles with mast arm supports. They will support street light luminaires and/or traffic signal mast arms and will be served by underground cables.

GENERAL

2. (a) Specifications. The poles must conform in detail to the requirements herein stated, and to the Specifications and Methods of Test of the American Society for Testing and Materials cited by ASTM Designation Number of which the most recently published revisions will govern.
- (b) Acceptance. Poles not conforming to this specification will not be accepted.
- (c) Bidders Drawings. Bidders must submit with their bids detailed scale drawings of the mast showing actual dimensions, details, and welds. Shop drawings must be original engineering drawings created by the manufacturer. The drawings must show every dimension necessary to show how all parts will fit each other and be properly held in assembly. These drawings must also be submitted in electronic format, preferably Microstation 95, if so requested by the City.
- (d) Drawings. The drawings mentioned herein are drawings of the Department of Streets and Sanitation being an integral part of this specification cooperating to state necessary requirements.
- (e) Sample. If requested by the City, one completely assembled anchor-base pole of the manufacture intended to be furnished, must be submitted for review by the Commissioner within 14 working days of receiving Notice-to-Proceed.

- (f) Warranty. The manufacturer must warrant the performance and construction of the light poles to meet the requirements of this Specification and must warrant all parts, components, and appurtenances against defects due to design, workmanship, or material developing within a period of three years after the light poles have been delivered. This will be interpreted particularly to mean structural or mechanical failure of any element or weld, or failure of any portion of the painting system. The warranty must be furnished in writing guaranteeing material replacement including shipment, free of charge to the City. The Commissioner will be the sole judge in determining which replacements are to be made and the Commissioner's decision will be final.

STANDARDS

3. (a) Assembly. Each anchor base pole must consist of a steel mast with handhole entry, entry door with machine screws, grounding nut, mast base plate, top cap for mast, two (2) mast arm supports, bolt covers, and all necessary hardware required for complete assembly of these parts, ready for assembly, without special tools.
- (b) Interchangeability. Members of each pole type must be mutually interchangeable for assembly, so that no reworking will be required to make any member fit properly in the place of any other similar member of any other similar pole.
- (c) Design. Each pole type must conform in design and dimensions to the pertinent drawing(s) listed in Table "A".

MASTS

4. (a) Mast Size. The outside diameters of the mast of each pole type must be as listed in Table A. The mast must be tapered at 0.14 inches per foot.
- (b) Material. The mast must be fabricated from one length of No. 3, No. 7, or No. 11 Standard gauge steel meeting the material requirements of ASTM A606 for low alloy high strength coil steel, which, after fabrication, must possess an ultimate tensile strength of not less than 70,000 psi and a yield strength of not less than 60,000 psi, in accordance with ASTM A595, Grade C. Chemistry of the steel must be such as to insure resistance to atmospheric corrosion superior to that of ordinary copper bearing steel. Material certification is required. Manufacturer's steel meeting the specified physical and chemical requirements, and approved by the Commissioner, will be accepted.

- (c) Fabrication. The mast must be fabricated with not more than one (1) longitudinal weld. The weld must be ground smooth so that it is virtually invisible. There must be no lateral welds in the masts other than where the masts are welded to the steel bases. The completed, unpainted masts must have smooth external surfaces free from protuberances, dents, cracks or other imperfections marring their appearance. Each mast must be straight and centered on its longitudinal axis.
- (d) Base. The mast base must be a steel plate, of low alloy, high strength steel as noted in Par. 4 (b).

Plate Base. The base plate for each pole type must be as listed in Table "A". It must be fabricated from the same ASTM A606 low alloy, high strength steel as is used for the mast. After fabrication the steel must meet the requirements of ASTM A588. The mast must be inserted into the base to a maximum depth which will still allow for an adequate weld to be made between the bottom of the mast and the plate. A circumferential weld must be made between the mast and the base at both the top and underside of the plate. Non-metallic removable bolt covers which completely cover the anchor bolts and nuts must be provided. The covers must be attached with non-metallic screws or another type of non-seizing fastener, as approved by the Commissioner. The covers must enclose the anchor bolts and be secured in an approved manner. The base must be attached to the mast so that the bearing surface of the base is at right angles to the longitudinal axis of the mast. The vertical center line of the seam must be positioned so that no welds for the simplex attachments or the handhole opening will go through the seam.

Anchor Rod Openings. All anchor rod openings for each pole type must have a width as listed in Table "A". Each opening must be sized to have a circumferential slot length equal to 15 degrees of the circumference.

- (e) Mast Arm Support Plates. The mast arm support plates will be made of cast steel conforming to the requirements for Grade 65-35 cast steel of ASTM A27, or equivalent, subject to approval. They must neatly fit the external surface of the mast. The upper mast arm support plate must have a hollow protuberance, the hole of which must be approximately equivalent to two (2) inches in diameter, extending into the interior of the pole providing a smooth surface for the lamp cables to rest upon. The mast arm support plates must be designed so that they will carry the mast arm and hold it in the proper position for fastening the mast arm to the mast. The design of the mast arm support plates must be a two (2) bolt type as shown on Drawing No. 659.
- (f) Provision for Ground. a 1/2"-13 square nut must be welded to the inside of the mast on the handhole entry frame for a ground connection.

- (g) Entry. A vertical doorframe carrying a removable door providing access to the interior of the mast must be welded into a close fitting opening centered approximately 15 inches above the bottom of the base. The doorframe must be formed and welded of steel with a cross section of two and one-quarter (2-1/4) inches wide by one-quarter (1/4) inch thick so as to adequately reinforce the opening of the mast. The internal horizontal clearance of the doorframe must be four and three-quarter (4-3/4) inches; its internal vertical clearance must be seven(7) inches. Its upper and lower ends must be semi-circular meeting its straight sides tangentially. The radius of this opening must be two and three-eighths (2-3/8) inches. The vertical center line of the entry must be at a right angle clockwise from the vertical center line of the mast arm supports. The frame must have two welded tabs; one at the top and one at the bottom of the door frame. These tabs must be drilled to accept a 1/4" screw. The top hole must be located 13/16 of an inch from the top of the opening. The bottom hole must be located 13/16 of an inch from the bottom of the opening. Steel spring clips must be mounted to the tabs. These clips must be made to accept 1/4"- 20 machine screws. The 1/4"-20 allen head machine screws must have a button head. The screws must have a stainless steel core within a threaded nylon body. Other non-seizing types of screws and fasteners may be considered.(The above requirements apply to all pole masts except those with a 10 inch bolt circle. Poles with 10 inch bolt circles must have handhole openings of 3" by 5". All other requirements apply.)
- (h) Door. The removable door must be formed of non-metallic material subject to approval of the Commissioner. It must fit the doorframe closely and be dished so that it will stay in proper position even if its locking screws must be slightly loosened. The door must be drilled top and bottom to accept the 1/4"-20 Allen head machine screws which will fasten the door to the doorframe. All doors must be interchangeable. Alternate methods will be subject to approval by the Commissioner or his duly authorized representative.
- (i) Locking Device. Any other door locking device, other than the one outlined above in (g) and (h), must be approved by the Commissioner or his duly authorized representative.
- (j) Tag. To each pole must be attached immediately below the handhole, by mechanical means and not by adhesive, a stainless steel tag with a stamped or embossed legend which must include the pole outside diameter at the base, the overall length, and the gauge; i.e., 12.5" X 34'-6" X 3 gauge.
- (k) Structural Requirements. The mast must be manufactured in accordance with AASTHO's 1994 version of the "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals". The shaft and base assembly must be designed to meet AASTHO's 1994 criteria for 80 MPH wind loading with a 30% gust factor. The poles must be designed appropriately for Chicago applications for both street lighting and traffic signal applications, including signal mast arms.

TOP

5. (a) Design. The mast top must be essentially conical with a globe-shaped upper-end and having a minimum wall thickness throughout of not less than 1/4 inch. The cone portion must meet the skirted portion of the top in a smooth filet, the skirt must enclose the top 7/8" inches of the mast. Three stainless steel, or other similar approved material, set screws not less than 3/4 inches long must be equally spaced in tapped holes around the skirt and must hold the top securely in place atop the mast. The design of the top must be similar to one shown on Drawing #11420A.
- (b) Material. The top must be aluminum alloy 356-F per ASTM B108. It must have smooth surfaces, neat edges and corners and be free from fins, holes or other casting flaws. Non-metallic tops may be substituted if approved by the Commissioner.
- (c) Finish. Tops must be painted as herein specified.

HARDWARE

6. All the hardware necessary to complete the assembly of the pole must be furnished. All hardware will be as specified elsewhere in these specifications. Hardware not specified elsewhere must be stainless steel, or equal corrosion-resistant non-seizing metal, or a non-metallic material subject to approval by the Commissioner.

WELDING

7. (a) General. Every welded joint must be made in conformity with the proper interpretation of the standard welding symbols of the American Welding Society as indicated on the drawings; however, each bidder must submit with his proposal a drawing showing the sizes and types of welds, must state the type of electrode, and must describe the welding methods, he proposes to use in fabricating the pole.
- (b) Testing. All welds of five percent (5%) of the poles in every lot must be inspected for penetration and soundness of the welds by the magnetic particle inspection method or by radiography. Acceptance or rejection will be governed by the same conditions as in Section 9. If the magnetic inspection process is to be used, the dry method with the direct current must be employed. All transverse welds must be magnetized by the "prod" (Circular magnetization) method. Longitudinal welds may be magnetized by either circular or longitudinal magnetization.

PAINTING

8. (a) Oil and Grease Removal. All metal surfaces must be washed with an alkaline detergent to remove any oils or grease.

- (b) Metal Cleaning. All exterior metal surfaces must be cleaned by blasting with a combination of shot and grit to remove all dirt, mill scale, rust, corrosion, oxides and foreign matter and provide a "near white" surface in accordance with SSPCS-SP10. Included in this process must be the interior base section of the mast to a minimum height of twelve (12) inches.
- (c) Chemical Pretreatment. The cleaned metal surfaces must then be treated with a hot, pressurized iron phosphate wash and must be dried by convection heat.
- (d) Exterior Coat. A thermosetting, weathering, Polyester powder coat must be applied electrostatically to all cleaned and treated surfaces to a uniform eight (8) mil thickness in a one coat application. This powder coat must be cured in a convection oven at a minimum temperature of 400°F to form a high molecular weight fusion bonded finish.
- (e) Alternate Methods. Alternate powder coat methods may be reviewed and tested on a case by case basis. However, no coating method will be accepted unless the Commissioner judges such alternate to be equal to the coating herein specified.
- (f) Interior Coat. The interior metal surfaces must be powder coated with a thermoplastic hydrocarbon resin containing corrosion inhibitors. The resin must be formulated for application over untreated metal surfaces. The resin must be applied at a temperature of approximately 200°F to a minimum thickness of three (3) mils. The interior thermoplastic coat must overlap the interior, thermosetting base coat by approximately six (6) inches. Alternate interior coatings may be used subject to prior approval of the Commissioner.
- (g) Durability. Both the exterior and interior coats must be capable of passing 1,000 hours of salt spray exposure as per ASTM B117 in a five percent (5%) Na Cl (by weight) solution at 95°F and 95% relative humidity without blistering. Before test, the panel must be scribed with an "X" down to bare metal.
- (h) Coating Measurement. Measurement of coating thickness must be done in accordance with SSPC-Pa 2-73T, "Measurement of Dry Paint Thickness with Magnetic Gauges," except that the lowest "single spot measurement" in an area of two square inches must be not less than 7.0 mils.
- (i) Color. Color must be gloss black unless otherwise noted in the order. A color sample must be submitted for approval prior to fabrication.

MAST TEST

9. (a) General. All completed masts must be available for testing for maximum deflection and set. The masts must meet the structural requirements of section 4(k). Unless specifically authorized in writing, all tests must be made at the works of the manufacturer. A record of every test must be made and a certified copy of the test record must be submitted to the Purchasing Agent before the masts are shipped. An engineer from the Bureau of Electricity, Engineering Division, must be present during the testing procedures, if so requested by the City.
- (b) Lot. Tests for deflection and set of the mast and of the mast arm supports must be made upon five (5%) percent of all the masts in every lot (two (2) min.). The selection of masts for testing must be random from the entire completed lot. If any of the masts in any lot fail to meet the test, an additional three (3%) percent of the masts of the same lot must be tested (two (2) min.). If any of these masts fail to meet the test requirements, the entire lot will be subject to rejection, except that the manufacturer may subject each mast in the lot to the test, and those which fulfill the requirement will be accepted. After testing, each base weld must be inspected by the magnetic particle method to determine that the welds have not been affected.
- (c) Mast Requirements. With base rigidly anchored, a test load as indicated in Table A must be applied at a point approximately two feet (2'0") from the free end. The load must be applied at right angles to the center line of the mast and in the same vertical plane. The deflection must not be greater than that indicated in Table A. Within one (1) minute after the test load is released, measurement must be made of the set taken by the mast. This set must not be greater than that indicated in Table A. The deflection measurement device must be reset to zero and the test load must be reapplied. The deflection must not change from the deflection noted in the first test by more than $\pm 5\%$. No measurable set must be noted within one (1) minute after test load is released.
- (d) Mast Arm Support (simplex) Requirements. With an appropriate mast arm firmly attached to the mast, a test load of 300 pounds must be applied to the mast arm as a side pull at a point seven (7) feet from the mast. After the test, the mast arm support welds on the mast must be tested by the magnetic particle method to determine that they have not been affected.
- (e) The contractor must include in his bid, the cost of travel, food and lodging for one (1) engineer. Travel for 150 miles or greater must utilize a major airline. Lodging accommodations must be equal to those provided at a Holiday Inn. The engineer must be given ten (10) working days notice of travel arrangements.

PACKAGING

10. (a) General. The poles must be shipped in twelve (12) pole bundles. Each pole must be individually wrapped so that the pole can be bundled for shipping and unbundled for delivery to the City without damaging the pole or its finish.
- (b) Bundles. The bundles must consist of twelve (12) poles laid base to top to form an approximately rectangular cylinder. Materials such as lumber (2" x 4" min.), non-marring banding, and other appropriate bundling materials must be used to make a rigid, long lasting, bundle capable of being handled, shipped and stored without shifting of contents or breaking, subject to approval. Any bundles, in which either poles or packaging is received broken, damaged or with contents shifted, will not be accepted and it will be the responsibility of the supplier to return the bundle to its original destination at no cost to the City of Chicago. The bundles should be capable of being stacked two (2) high without breaking, or shifting of the contents. Each bundle must be capable of being lifted by a fork lift truck or crane and the bundles must be shipped on a flat bed truck to facilitate unloading. Each pole wrapping must be clearly labeled indicating the pole size, i.e. 34'6", 7 GAUGE, STEEL POLE, 15" B.C.
- (c) Hardware. The bolt covers and their attachment devices must be shipped with each bundle and packaged in twelve (12) sets of four (4) each. The package must be labeled and placed in a prominent position to facilitate accessibility, and must be attached to, or within, the bundle in such a manner as to assure safe delivery. Payment will be withheld for any bundle delivered without the accompanying hardware. Pole caps must be attached at the manufacturer's facilities, or be packed separately in a manner similar to the bolt covers, and the same payment conditions will prevail. Cracked, broken or chipped parts will be considered as an incomplete delivery as regards payment.
- (d) Delivery. All poles will be delivered to the Bureau of Electricity storage yard at 4101 South Cicero Avenue in Chicago, or to another location within the City as indicated on the order. Light pole information must include any recommendations of the manufacturer for storage.

INSPECTION

11. An inspector representing the City must have free entry at all times, while the work on the contract is being performed, to all parts of the manufacturer's works which concern the manufacture of poles. The manufacturer must afford the inspector, without charge, all reasonable facilities to satisfy him that the poles are being furnished in accord with these specifications. The final inspection must be made at point of delivery. Any poles rejected as defective must be removed and disposed of by the contractor at his sole cost.

THIS SPECIFICATION MUST NOT BE ALTERED

**SPECIFICATION 1462
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
AUGUST 7, 1992**

**RIGID STEEL CONDUIT
(HOT DIPPED GALVANIZED)**

1. SCOPE

This specification describes rigid steel conduit, zinc coated.

2. GENERAL REQUIREMENTS

Rigid steel conduit must be zinc coated by the hot-dip process. Conduit must be furnished in 10 foot lengths, threaded on each end and with one coupling attached to one end and a protective cap at the other end.

3. STANDARDS

The conduit must be manufactured according to Underwriters Laboratories Standard U.L. - 6 and must meet ANSI Standard C 80.1 and the requirements of NEC Article 244. In addition, conduit must be recognized as an equipment grounding conductor as per NEC Article 250.118(2). There will be no exceptions to meeting these standards.

4. STEEL

Conduit must be formed from steel suitable for use as an electrical raceway. It must be structurally sound so that it will hang straight and true when supported by hangers in accordance with Chicago electrical code requirements and must be capable of being field bent without deformation of the walls.

Conduit must have a circular cross section sufficiently accurate to permit the cutting of threads in accordance with Table 2 and must provide a uniform wall thickness throughout. All surfaces must be smooth and free of injurious defects. The dimensions and weights of rigid steel conduit must be in accordance with Table 1.

5. THREADING AND CHAMFERING

Each length of conduit, and each nipple, elbow and bend must be threaded on both ends, and each end must be chamfered to remove burrs and sharp edges.

The number of threads per inch, and the length of the threaded portion at each end of each length of conduit, nipple and elbow must be as indicated in Table 2. The perfect thread must be tapered for its entire length, and the taper must be 3/4 inch per foot.

6. ZINC COATING

After all cutting threading and chamfering all conduit surfaces must be thoroughly cleaned before application of zinc. The cleaning process must leave the interior and exterior surfaces of the conduit in such a condition that the zinc will be firmly adherent and smooth.

The conduit must be hot dipped galvanized both inside and out to provide approximately two (2) ounces of zinc per square foot. This is equivalent to 3.4 mils of zinc coating. An additional interior coating to aid in the installation of wires is required.

7. COUPLINGS

Couplings must comply with the following requirements:

- (a) The outside surface of couplings must be protected by means of a zinc coating. The zinc content of the coating on the outside surface must be equivalent to a minimum thickness of 3.4 mils.
- (b) Couplings must be so made that all threads will be covered when the coupling is pulled tight on standard conduit threads.
- (c) Both ends of the coupling must be chamfered to prevent damage to the starting threads.
- (d) The outside diameter, length and weight of coupling must be as indicated in Table 3.
- (e) Couplings must be straight tapped, except that the 2 ½ inch and larger sizes may be taper-tapped.

8. PACKING AND IDENTIFICATION

The pipe must be delivered in bundles. Each length of conduit must be marked with the manufacturer's name or trademark. Securely attached to each bundle at two (2) locations on the bundle must be a weather resistant tag containing the following information:

- (a) conduit size
- (b) footage of bundle
- (c) gross weight of bundle

Precaution will be taken by the contractor in handling during shipment or delivery of conduit, and any conduit found to be damaged will not be accepted.

9. TEST AND INSPECTION

Galvanized rigid conduit must be capable of being bent cold into a quarter of a circle around a mandrel, the radius of which is four times the nominal size of the conduit, without developing cracks at any portion and without opening the weld.

The protective coatings used on the outside and inside surfaces of rigid steel conduit must be sufficiently elastic to prevent their cracking or flaking off when a finished sample of ½ inch conduit is tested within one year after the time of manufacture, by bending it into a half of a circle around a mandrel, the radius of which is 3 ½ inches.

Tests on sizes other than ½ inch may be conducted within one year after the time of manufacture. If such tests are conducted, the conduit must be bent into a quarter of a circle around a mandrel, the radius of which is six times the nominal size of the conduit.

One of the following three test methods must be employed for measuring the thickness or extent of the external zinc coating on conduit:

- (a) Magnetic test.
- (b) Dropping test.
- (c) Preece test (Material which will withstand four 1-minute immersions will be considered as meeting requirements as follows; the zinc content of the coating on the outside surface must be equivalent to a minimum thickness of 3.4 mils).

All tests and inspections must be made at the place of manufacture prior to shipment unless otherwise specified, and must be so conducted as not to interfere with normal manufacturing processes.

Each length of conduit must be examined visually both on the outside and inside to determine if the product is free from slivers, burrs, scale or other similar injurious defects (or a combination thereof), and if coverage of the coating is complete.

If any samples of rigid steel conduit tested as prescribed in this specification should fail, two additional samples must be tested, both of which must comply with the requirements of the specification.

All pipe which may develop any defect under tests, or which may before testing or on delivery be found defective, or not in accordance with these specifications, must be removed by the Contractor at his own expense; and such pipe so removed by the Contractor must be replaced by him within ten (10) days of such rejection with other pipe which will conform to these specifications.

TABLE 1

Design Dimension and Weights of Rigid Steel Conduit

Nominal or Trade Size of Conduit	Inside Diameter	Outside Diameter	Wall Thickness	Length Without Coupling	Minimum Weight of Ten Unit Lengths With Couplings
<u>(Inches)</u>	<u>(Inches)</u>	<u>(Inches)</u>	<u>(Inches)</u>	<u>(Feet & Inches)</u>	<u>(Pounds)</u>
1/2	0.622	0.840	0.109	9-11 1/4	79.00
3/4	0.824	1.050	0.113	9-11 1/4	105.0
1	1.049	1.315	0.133	9-11	153.0
1 1/4	1.380	1.660	0.140	9-11	201.0
1 1/2	1.610	1.900	0.145	9-11	249.0
2	2.067	2.375	0.154	9-11	334.0
2 1/2	2.469	2.875	0.203	9-10 1/2	527.0
3	3.068	3.500	0.216	9-10 1/2	690.0
3 1/2	3.548	4.000	0.226	9-10 1/4	831.0
4	4.026	4.500	0.237	9-10 1/4	982.0

NOTE: The applicable tolerances are:

Length: + 1/4 inch (without coupling)

Outside diameter: + 1/64 inch or -1/32 inch for the 1 1/2 inch and smaller sizes,
± 1 percent for the 2-inch and larger sizes.

Wall thickness: - 12 1/2 percent

TABLE 2
Dimensions of Threads

Nominal or Trade Size of Conduit (Inches)	Threads per Inch	Pitch Diameter at end of Thread (Inches) Tapered 3/4 Inch per foot	Length of Thread (Inches)	
			Effective L2	Overall L4
1/2	14	0.7584	0.53	0.78
3/4	14	0.9677	0.55	0.79
1	11 1/2	1.2136	0.68	0.98
1 1/4	11 1/2	1.5571	0.71	1.01
1 1/2	11 1/2	1.7961	0.72	1.03
2	11 1/2	2.2690	0.76	1.06
2 1/2	8	2.7195	1.14	1.57
3	8	3.3406	1.20	1.63
3 1/2	8	3.8375	1.25	1.68
4	8	4.3344	1.30	1.73

NOTE: The applicable tolerances are:

Threaded Length (L₄ Col 5): Plus or minus one thread

Pitch Diameter (Col 3): Plus or minus one turn is the maximum variation permitted from the gaging face of the working thread gages. This is equivalent to plus or minus one and one half turns from basic dimensions, since a variation of plus or minus one half turn from basic dimensions is permitted in working gages.

TABLE 3
Designed Dimensions and Weights of Couplings

Nominal or Trade Size of Conduit (INCHES)	Outside Diameter (INCHES)	Minimum Length (INCHES)	Minimum Weight (POUNDS)
1/2	1.010	1-9/16	0.115
3/4	1.250	1-5/8	0.170
1	1.525	2	0.300
1 1/4	1.869	2-1/16	0.370
1 1/2	2.155	2-1/16	0.515
2	2.650	2 1/8	0.671
2 1/2	3.250	3-1/8	1.675
3	3.870	3-1/4	2.085
3 1/2	4.500	3-3/8	2.400
4	4.875	3-1/2	2.839

THIS SPECIFICATION MUST NOT BE ALTERED

**SPECIFICATION 1465
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
REVISED AUGUST 28, 1995**

GROUND RODS

SUBJECT

1. This specification states requirements for ground rods to be used for ground connections in street lighting, traffic signal, fire alarm, and miscellaneous electrical circuits.

GENERAL

2. (a) Ground Rods must be copper clad, steel rods suitable for driving into the ground without deformation of the rod or scoring, separation or other deterioration of the copper cladding.

DESIGN

3. (a) Ground rods must be made of mild steel core suitable for driving into the earth without deformation.
- (b) A heavy, uniform covering of electrolytic copper must be metallically bonded to the steel core to provide a corrosion resistant, inseparable bond between the steel core and the copper overlay.
- (c) The rod must be processed to work harden the copper providing a scar resistant surface.
- (d) The finished rod must be of uniform cross-section; straight, and free of nicks, cuts or protuberances.
- (e) The rod must be pointed at one end and chamfered at the other end.
- (f) All ground rods must be three-quarter inches (3/4") in diameter. The length must be as specified elsewhere. The length of the rod must be clearly and permanently marked near the top of the rod (chamfered end).
- (g) All ground rods must conform to U.L. 467 and must be listed as such.
- (h) All ground rods must be supplied with a Blackburn G6 clamp, or equivalent.

ACCEPTANCE

4. (a) The contractor must furnish one sample of the ground rod proposed to be furnished within fourteen business days from receipt of notice. The approved sample must be the standard, in all respects, to which all ground rods furnished must conform. The accepted ground rod will be credited as part of the order.
- (b) The sample ground rod must be delivered to the Engineer of Electricity, 2451 S. Ashland Avenue, Chicago, Illinois 60608.
- (c) Ground rods not accepted must be removed at the sole expense of the contractor.

THIS SPECIFICATION MUST NOT BE ALTERED

**SPECIFICATION 1467
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
MAY 12, 1993**

ROD: ANCHOR, STEEL, WITH HARDWARE

SUBJECT

1. This Specification states the requirements for steel anchor rods with hardware for the street light pole foundations.

GENERAL

2. (a) Specifications. The anchor rods must conform in detail to the requirements herein stated, and to the specifications of the American Society for Testing and Materials cited by ASTM Designation Number, of which the most recently published revision will govern.
- (b) Drawing. The drawings mentioned herein are issued by the Department of Streets and Sanitation, and are an integral part of this specification.

ANCHOR ROD

3. (a) Fabrication. Each anchor rod must be fabricated in conformity with City of Chicago drawings numbered 806, 811, 830 and 844.
- (b) Material. The rods must be fabricated from cold rolled carbon steel bar meeting the requirements of ASTM Specification A-36, except that the Specification must be modified to provide a minimum yield point of 55,000 psi (379 MPa).
- (c) Thread. The straight end of each rod must be threaded as shown on City of Chicago drawing for that size rod, and must be American Standard, National Coarse.

HARDWARE

4. Hardware furnished with the anchor rod must be as shown on the applicable drawing. It must include two (2) hexagonal nuts, American Standard Regular, two (2) flat washers, type B, series W, and one (1) lock washer, steel, helical spring. The nuts must have a Class 2 or 3 fit.

FINISH

5. (a) Galvanizing. The threaded end of each rod must be hot dipped galvanized for the distance shown on the applicable drawing. The thickness of the galvanized coating must not be less than 0.0021 inches. Each hexagonal nut and washer must be galvanized to the minimum thickness required by ASTM A-153, Class C, or ASTM B-454, Class 50. After galvanization, each anchor rod and nut must have a mating fit equivalent to the American Standard Class 2 or 3 fit for nuts and bolts.
- (b) Rust Inhibitor. With the hardware in place on the end of the bolt, the galvanized portion of the bolt must be coated with heavy No-Ox-Id or equal rust inhibiting greasy compound.

TESTS

6. At the discretion of the Commissioner, anchor rods and hardware furnished under this specification will be subject to testing to determine compliance with the materials physical requirements.

INSPECTION

7. Final inspection must be made at point of delivery. Any anchor rods and hardware rejected must be removed by the Contractor at his sole expense.

THIS SPECIFICATION MUST NOT BE ALTERED

**SPECIFICATION 1469
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
REVISED JUNE 1, 2000**

**TRAFFIC SIGNAL CONTROLLER AND CABINET
LOCAL AND MASTER TYPES**

1. GENERAL REQUIREMENTS

- 1.1 This specification details the requirements for traffic signal control equipment for use in the City of Chicago.
- 1.2 Within fourteen (14) business days from receipt of notice, the contractor must provide a sample to the General Superintendent of Electrical Operations, Bureau of Electricity, 2451 South Ashland Avenue, Chicago, Illinois 60608. The sample must consist of the controller, cabinet, load switches, conflict monitor and all appurtenant wiring and equipment completely assembled as a working unit. This sample must be regarded as a finished production sample and conformance or non-conformance of the bid to these specifications must be based on the sample submitted. No subsequent modifications to the production sample will be allowed. The sample must become the property of the City of Chicago with a suitable credit issued to this contract.
- 1.3 All tests as outlined herein must be regarded as minimum requirements. The contractor must submit his testing procedure for approval prior to performing any testing functions. Upon successful completion of all testing, certified test reports must be submitted for each unit. Units not successfully passing these tests or lacking proper documentation will be rejected.
- 1.4 Standards. Equipment furnished under this specification must meet the appropriate requirements of the following standards, as required within the body of this specification:
- American Society for Testing and Materials (ASTM)
 - Manual on Uniform Traffic Control Devices (MUTCD)
 - National Electrical Manufacturers Association (NEMA)
 - Occupational Safety and Health Administration (OSHA)
 - Underwriters Laboratories (UL)
- 1.5 Definitions. Where referenced in the specification, the following definitions will apply:
- 1.5.1 Approval. Approval will mean approval in writing by the Commissioner of Streets and Sanitation, or his duly authorized representative.

2. MATERIALS AND EQUIPMENT REQUIREMENTS

2.1 CONTROLLER

- 2.1.1 Power Source. The controller must operate on 120 volt, 60 cycle, single phase, alternating current.
- 2.1.2 Packing. Each controller, with all its component parts, must be suitably packed in a single container in such a manner as to prevent damage to the contents in shipment and handling.
- 2.1.3 Instructions. One (1) complete set of up to date instructions providing complete information on installation, adjustment, operation and maintenance, including both up to date "Logic Schematics" and "Electronic Circuit" diagrams, of these controllers, must be furnished to the Bureau of Electricity for approval prior to the first shipment of controllers. All information, including photos and schematics, must reference to the controller being furnished on this contract and must be a high quality, completely legible reproduction. Upon approval, one complete set of data must be furnished with each controller.
- 2.1.4 Warranty. The contractor must warranty the performance and construction of these traffic signal controllers to meet the requirements of this specification, and must warranty all parts, components, and appurtenances against defects in design, material, and workmanship for a period of one (1) year after installation on moving parts, and for a period of five (5) years after installation on solid state devices. In the event of defects or failures during these periods, the contractor must repair and/or replace all defective or failed parts or appurtenances at no expense to the City within sixty (60) days from the date of shipment by the City.
- 2.1.5 Pre Shipment Testing. The manufacturer of the controller must perform at his manufacturing facilities a one hundred (100) hour burn-in test on every controller, conflict monitor unit, and appurtenant devices. This test period must be certified by the manufacturer with supportive documentation and must include the device serial number, dates and times of test periods, and results. Any failed, or nonconforming components must be replaced at this time. The 72 hour function test described in this specification, must be performed on each complete controller system. After each of the components has passed the burn-in test, they may be used in the assembly of the complete controller unit. Each completed unit must be subjected to the 72 hour function test as described in this specification. Should the controller fail to complete this test for any reason, the failed portion(s) of the unit must be replaced and the test repeated in its entirety. Certification of these tests must be attached to the outside of the shipping container. Any containers without this attached certification will be returned to the manufacturer at his sole expense. This certification is in addition to any other documentation and/or testing required by these specifications.
- 2.1.6 Manufacturer. The manufacturer of these controllers must demonstrate a knowledge of past production, or have been actively engaged in the sale and/or service of traffic signal controllers herein described, as demonstrated by a submitted list of comparable projects.

2.2 CONTROLLER TIMING

- 2.2.1 Controller timing must be accomplished with solid state digital timing referenced to a 60 Hertz power source.
- 2.2.2 The time cycle must remain constant and accurate within a voltage range of 95 to 135 VAC, and within a temperature range of minus(-) 30 degrees F. to plus (+) 165 degrees F., (-34 degrees C. to 74 degrees C.), without the use of heater elements or cooling means.
- 2.2.3 The cycle length must be capable of operating up to 255 seconds.
- 2.2.4 The controller must provide consecutive divisions of the time cycle hereinafter termed "intervals", during which combinations of signal indications do not change.
- 2.2.5 The controller must provide a minimum of 24 consecutive intervals.
- 2.2.6 Interval set times must be provided in both one-tenth (1/10) second steps and in one (1) second steps.
- 2.2.7 Offsets must be set in one (1) second steps.
- 2.2.8 Separate time settings must be available for each of the eight (8) cycle lengths, each of the five (5) offsets per cycle, and each of the twenty-four (24), or more, intervals per cycle. Multiple splits (up to four) within an interval must be provided.
- 2.2.9 The front panel of the controller must contain a display which must show the interval number, interval time, and offset for any dial as well as the currently active dial, depending upon the keyboard selection.
- 2.2.10 All timing entries must be made from a keyboard mounted on the controller front panel. It must be arranged such that a security access code is required before timing entries can be initiated. Two (2) security access by-pass codes must also be provided, one of which will initiate and the other negate this requirement.
- 2.2.11 Offset Correction. The controller must be capable of offset correction by both the dwell and short way methods. When the dwell method is used, the controller must be capable of a dwell time of up to one-half of the cycle length. Dwell time must be programmable. When the short way method is used, it must be possible to exclude intervals from timing variation.
- 2.2.12 Manual Operation. Operation of the controller by manual control must provide the same sequence of outputs as the current cycle, split, and signal plan called for by the interconnect or T.B.C. with no momentary undesirable indications appearing. It must also be possible to guarantee that certain user defined intervals must time out as normal before advancing to the next interval.
- 2.2.13 Housing. The controller must be enclosed in a rigid, dust and moisture resistant housing with front panel indicator to show which cycle, offset and interval are in effect. The timing of each interval, cycle and offset which is in, or not in, effect must be available for viewing by the use of front panel switches. Individual plug-in circuit boards and "mother" boards must be of moisture resistant design and construction.

- 2.2.14 Replacement. The controller must be capable of being replaced with an identical unit by the use of a standard M.S. type connector.
- 2.2.15 Marking. The circuit reference designation for each component on each printed circuit board must be clearly marked immediately adjacent to the component. Each board must have a unique serial number for identification purposes.

2.3 SIGNAL CIRCUIT SWITCHING

- 2.3.1 Interval Programming. Timer units must be supplied with either EEPROM or non-volatile RAM signal drive circuit programming means to allow for the arrangement and rearrangement of signal output interval sequences to energize, or de-energize, any signal circuit during any interval. This program must provide separate, distinct access codes for timing and for sequence.
- 2.3.2 Outputs. All signal circuit outputs must be capable of reliably switching from five (5) to twenty-four (24) VDC with a steady current of three (3) to ten (10) ma.
- 2.3.3 Output Circuits. The controller must be capable of forty-eight (48) user defined and individually programmed signal outputs.
- 2.3.4 Preemption. The controller must be capable of a minimum of six (6) Preemption sequences utilizing separate, or a combination of separate and existing, output sequencing. It must also be capable of defining priority of Preemption inputs as either High or Low.
- 2.3.5 Actuation. The controller must be capable of responding to a minimum of sixteen (16) actuation inputs. Responses must service user defined intervals in a user defined sequence.
- 2.3.6 Signal Plans. The controller must be capable of eight (8) separate user defined signal plans.
- 2.3.7 M.U.T.C.D. Flash. The controller must be capable of M.U.T.C.D. flash without external devices.
- 2.3.8 Transfer Intervals. The controller's Split, Signal Plan, Start Up, Restart, Enter Flash and Exit Flash must be user defined.

2.4 TIME BASED COORDINATORS

- 2.4.1 Isolated Intersection (TIME BASE COORDINATOR). Each controller must be furnished with an internal eight (8) circuit, solid state, "time of day", "day of week", timing device which allows for synchronization of the system without external interconnection. This function must be keyboard programmable to one (1) second resolution. Programming must be provided for controlling operating modes, such as SET CLOCK, RUN, EXAMINE/PROGRAM, etc. Indicators must be provided on the front panel to show day of week, time in hours and minutes, and output circuit activation. This function must meet the requirements:

- 2.4.2 System Synchronization. System synchronization must be based on an "Absolute Zero" offset reference. This method provides for a "continuous" reference, of the system to a real time base as established by the Bureau of Electricity and strictly prohibits "once a day" synchronization of the System. After a power outage, the system will automatically reference each cycle counter back to its last reference point. The system must be capable of automatically referencing back a minimum of 100 hours without manual reset.
- 2.4.3 Dials. This function must provide three (3) outputs for selection of one (1) of eight (8) or more dials. Each dial must offer a minimum of five (5) offsets, four (4) splits and eight (8) signal plans.
- 2.4.4 Stability of Pulse. The stability of the synchronous pulse output must be that of the 60HZ power line when it is within 95-135 VAC. When line power is out of this range or power is removed, the device must maintain synchronization and program functions and not drift more than $\pm 0.005\%$ for a minimum of ten (10) hours.
- 2.4.5 Outputs. DC outputs: All DC outputs must be capable of reliably switching from five (5) to twenty-four (24) VDC with a steady current of three (3) to ten (10) ma.
- 2.4.6 Visual Program Verification. When a program instruction is being entered, each element of the program must be visible on the display for verification before the instruction is entered. Provision must be made for correcting any instruction before it is entered. The unit must provide for alteration of any single instruction of an entered program without disturbing any other instruction in that program.

2.5 CONFLICT MONITOR

- 2.5.1 General. Each controller must be furnished with a NEMA conflict monitor unit for checking for conflicts in the signal output circuits. The conflict monitor must be capable of monitoring a minimum of twelve (12) distinct channels. It must be a self-contained unit with its own power supply and not be located within the timer housing.
- 2.5.5 Programming Board. A removable programming board must be supplied with the monitor for programming signal compatibility. The circuits for programming must be composed of soldered jumper wires. Diode or dip switch type programming will not be acceptable. The programming board must contain no circuitry or components other than the wire jumpers and the wire jumper soldering devices.
- 2.5.3 Flashing Circuit Energizing. The conflict monitor must be programmed to put the controller in a flashing sequence upon detection of a failure or conflicting signal display. The controller must also be programmed to energize the flash circuit if the conflict monitor is removed or loses its supply voltage. The conflict monitor must have a manual reset button to return the controller to normal operation after conflict circuit operation is no longer necessary.
- 2.5.4 Stop Time Circuit. A stop-time control circuit must be supplied from the conflict monitor to force the timer unit to stop timing upon detection of a conflict.
- 2.5.6 Indicator. The front panel of the conflict monitor housing must have an indicator which will be activated when a conflict or failure occurs as per Section 6 of NEMA Spec. TS1-1983.

- 2.5.7 Latch Circuit. The conflict monitor must have a latch circuit, insuring that if a voltage monitor failure occurs, the intersection remains in conflict until reset.
- 2.5.8 Memory. The conflict monitor must have the ability to store, in memory, a minimum of ninety-nine (99) conflict events, including date of conflict and channels conflicting.

2.6 CONFLICT MONITOR ASSIGNMENTS

- 2.6.1 Conflict monitor channels must be assigned as follows:

(Red, Yellow, Green channels)

Channel 1 Vehicle - Load Switch 1
Channel 2 Vehicle - Load Switch 2
Channel 3 Vehicle - Load Switch 3
Channel 4 Vehicle - Load Switch 4
Channel 5 Vehicle - Load Switch 5
Channel 6 Vehicle - Load Switch 6
Channel 7 Vehicle - Load Switch 7
Channel 8 Vehicle - Load Switch 8
Channel 9 Vehicle - Load Switch 9
Channel 10 Vehicle - Load Switch 10
Channel 11 Vehicle - Load Switch 11
Channel 12 Vehicle - Load Switch 12

- 2.6.2 It must be possible for the user to change conflict assignments without unsoldering any connections.
- 2.6.3 All unused channels - vehicle or pedestrian - must be neatly tied or terminal mounted in such a manner that they are readily available in front of the panel. If tied, the harness wires must be labeled. If terminal mounted, the terminations must be labeled.
- 2.6.4 A terminal must be provided for the red enable feature.
- 2.6.5 A terminal must be provided for the hook up of any unused red channels to AC.
- 2.6.6 Controller monitoring must consist of; voltage monitor, 24 VDC I, 24 VDC II.
- 2.6.7 The output relay must operate a sixty (60) ampere, normally open, "A" type mercury contactor without the use of an external or "cabinet interface" relay.

2.7 CABINET

- 2.7.1. Housing. Each controller must be furnished completely housed in a Type 5052-H32 aluminum housing of 0.125 inch thickness. All cabinets must be provided with Factory installed 1 1/8" x 1/2" deep channels. Four channels must be provided for each cabinet side and back. All shelves, panels and individual equipment items must be mounted to these channels using 1.0" channel nuts with 1/4-20 bolts. All items mounted on panels must be securely fastened by bolting into drilled and tapped holes. No pop rivet or similar fastening methods will be accepted. Cabinets must be M Type with nominal dimensions of 50" high by 30" wide by 17" deep for local controllers, and P Type with nominal dimensions of 55" high by 44" wide by 26" deep for master controllers. Manufacturer will be Erpel, Hennessy, Southern Manufacturing Company, or approved equals.
- 2.7.2 Door. The cabinet must have a main door and a police door hinged with one-quarter inch (1/4") minimum, continuous, removable stainless steel pins. The doors must be closely fitted to a neoprene gasket making the doors dust, water and weather resistant. The doors must be interchangeable with any other doors from any other controller in this order.
- (1) Main Door. Opening of the main door must provide complete access to the cabinet interior. The door must be embossed, subject to approval, with the legend "CITY OF CHICAGO-TRAFFIC CONTROL" in letters at least one (1) inch high. The door must have stops at 90, 150 and 180 degrees, from the closed position. The door latch must have three (3) point locking with rollers at the ends of the latch rods. The latch handle must be capable of being padlocked. The key lock for the latch mechanism must be a Corbin cylinder lock with a #2 key. Two (2) keys must be furnished with each cabinet.
 - (2) Police Panel Door. The police panel door must be furnished with a lock for a modified Chicago police key per sample to be furnished to the successful bidder. This key must have a shaft of at least one and three quarter inches (1-3/4") in length. Two keys must be furnished with each cabinet.
- 2.7.3 Cabinet Ventilation. A fan, having a minimum air movement capacity of 100 CFM, must be mounted in the air baffle in the top of the cabinet with an air outlet built into the roof overhang. The main door must be louvered and equipped with a removable, standard, commercially available aluminum dust filter. The ventilation openings must be equipped with removable covers for summer operation. No external fan housings or air outlets will be allowed. Any other method must be approved.
- 2.7.4 Shelf. The cabinet must contain a vertically adjustable shelf large enough to accept the solid state controller and all other shelf mounted devices.
- 2.7.5 Size. The exterior dimensions of the cabinets will be approximately fifty (50) inches high by thirty (30) inches wide by seventeen (17) inches deep for M Type cabinets, fifty-five (55) inches high by forty-four (44) inches wide by twenty-six (26) inches deep for P Type cabinets, and must conform to N.E.M.A. 3R pad mounted specifications. The bolt pattern must be a four (4) point pattern with the bolt notches being in the center of each side.

2.7.6 Finish. The exterior surfaces of the cabinet must be smooth. All drilled, tapped, or punched holes on the outer surface must be filled with liquid metal and ground smooth, and slotted screw heads must be ground smooth flush with surface. Bolts extending through cabinet wall must be round head, carriage, square shoulder type and fastened on the inside of the cabinet with an Esna nut and necessary gaskets to insure the weatherproofing integrity of the cabinet. The finished cabinet must be thoroughly degreased in a wash process and dried in a heated chamber. A thermosetting, ultra violet resistant, polyester powder coat must be electrostatically applied to all cleaned and treated surfaces and cured to a hard, mar resistant finish in a heated chamber at a temperature recommended by the powder coat paint manufacturer. Exterior color must conform to Federal Standard 595, and either be City of Chicago green color No. 14110 or gloss black color. Exterior color must be as defined in the PROPOSAL or Contract Plans, and color samples must be submitted for approval prior to acceptance of cabinet. Cabinet interior must be glossy white and may be either baked enamel or thermosetting, polyester powder coat. For either process, the interior must be prepared as described above. If the baked enamel finish is used, it must be preceded by one (1) coat of primer.

2.8 POWER SUPPLY

- 2.8.1 A sixty (60) ampere main breaker must be inserted in series with the line.
- 2.8.2 An unfused terminal bus must be provided for ground side of the power supply and signal conductor commons.
- 2.8.3 Individual circuit breakers must be supplied for: (a) AC+ lights, 50 amperes; (b) AC+ control, 10 amperes; (c) duplex outlet supply, 15 amperes.
- 2.8.4 The incoming line must contain lightning protection devices consisting of, but not limited to, a metal oxide varistor and gas type arrestor. The gas type arrestor must be on the line side of the radio interference filter.
- 2.8.5 Contactor: A sixty (60) ampere Magnacraft, or approved equivalent, normally open, "A" type mercury contactor must be supplied for opening and closing the AC supply to the signal bus. This contactor must be mounted in such a manner on the power supply panel that accidental contact does not produce a safety hazard.
- 2.8.6 R.I.S. Filter: A radio interference suppression filter rated at sixty (60) amperes minimum must be installed in line with the main power supply, after the sixty (60) ampere circuit breaker.
- 2.8.7 Ground. The grounded side of the power supply must be continuous throughout the controller and must be grounded to the controller cabinet in an approved manner meeting OSHA requirements.
- 2.8.8 Polarity. The phase conductors of the signal circuits must have the same polarity as the phase side of the power supply, and the common conductor(s) must be of the same polarity as the grounded side of the power supply.

2.9 LOAD SWITCH BAY

- 2.9.1 General. A panel must be provided for mounting the load switch jacks, flash transfer relay jacks, flasher jack, auxiliary relays, time clock jacks, switches, flash change combination terminals, and terminals for field signal connections under non-interconnected operation.
- 2.9.2 Wiring. Panel wiring must be neatly laced and properly terminated individual conductors. They must be insulated and properly sized for their application.
- 2.9.3 Load Circuits. Each load circuit must be capable of carrying fifteen (15) amperes continuously at a temperature of 74 degrees C (165 degrees F).
- 2.9.4 Bus Feeds. Bus feeds must be capable of carrying fifty (50) amperes continuously at a temperature of 74 degrees C. (165 degrees F).
- 2.9.5 Equipment. In addition to the items listed in 2(a), the wiring panel must include, but not be limited to, the following:
- (1) Ten (10) ampere fuses with barrier type fuse holders must be installed between the load switch signal output circuits and field terminals for signal light conductors. Each terminal must be the barrier type with sufficiently long screws to accept four (4) #12 AWG solid conductors. The terminals must be located at least two inches (2") above the bottom of the cabinet.
 - (2) Switching Device. The signal load switching device must be a three (3) circuit, solid state, jack mounted load switch which meets the N.E.M.A. Publication TS-1, Part 5 requirements. Each load switch must be rated for a minimum fifteen (15) ampere continuous resistive load and must mate with an S-2412-SB panel socket. A minimum of twelve(12) and a maximum of sixteen (16) load switches to be provided with each cabinet, as defined in the PROPOSAL or Contract Plans.
 - (3) User Programmable Interface. Two (2) sets of terminal blocks must be provided between the machine logic output and the input side of the load switches. By terminating all machine logic output on one set of terminals and all load switch input to the other set, an interface is thus created by which the machine logic can be readily connected to any of the load switches by means of a jumper wire. The two (2) sets of terminal blocks must be conveniently located in close proximity to each other and must be arranged such that, initially, each function will be factory wired directly from one set of terminals to the other without the need to criss-cross wires between blocks.
 - (4) Number of Signal Circuits:
 - a. Twelve (12) load bay panel. Each panel must be equipped with twelve (12) load switch jacks for a minimum of thirty-six (36) signal circuits.
 - b. Sixteen (16) load bay panel. Each panel must be equipped with sixteen (16) load switch jacks for a minimum of forty-eight (48) signal circuits.

- c. All unused signal circuits must be neatly tied or terminated. If tied, the harness wire must be labeled. If terminated, each termination must be identified.

2.9.6 Identification. All field terminals must be suitably identified, subject to approval.

2.10 FLASHING FEATURE

2.10.1 General. The flasher must be a solid state device, with no contact points or moving parts, producing between 50 and 60 flashes per minute with a 40 to 50 percent duty cycle. The flasher mechanism must be mounted on a type P-406-SB plug which will mate with an S-406-SB socket on the controller panel. The flasher must utilize zero-point switching, with turn-on at the zero voltage point (± 5 degrees) of the power line sinusoid.

2.10.2 Flasher Panel. A panel must be provided with one (1) terminal wired to the flasher and marked "FL". The panel must be equipped with terminals to provide or omit flashing of all red and yellow outputs.

2.10.3 Flasher Circuits. Flashers must provide two (2) output circuits to permit alternate flashing of signal phases and must be capable of carrying a minimum of twenty (20) amperes per circuit at 120 volts. The flasher must operate continuously so that flashing power will be available at the field terminal marked "FL". The flasher wiring must divide the loads imposed on the two (2) circuit flasher alternately on each phase.

2.10.4 Manual Flash. A manual flash switch must provide flashing indication for all circuits. The flash change combination terminals must allow the selection of flashing either yellow or red on the main and/or cross streets, or complete omission of the flashing feature if required.

2.11 POLICE PANEL

2.11.1 Auto-Off Flash Switch. Each controller must be provided with an auto-off-flash switch. In the "AUTO" position the signals will be on and the controller timing unit will run normally. In the "OFF" position the signals will be OFF and the controller timing unit will continue to run. In the "FLASH" position the signals will flash and the controller timing unit will continue to run. The auto-off flash switch must be located on the side of the police switch panel that faces outward when the police door is open.

2.11.2 Auto-Hand Switch. Each controller will have an auto-hand switch on the back side of the police switch panel. This switch must be so arranged that the switch can be physically rotated 180 degrees to provide usage after opening the police panel door. It must be so mounted that the act of rotation does not affect the police switch panel. Switch terminals must not be exposed on either position.

2.11.3 Terminal Block. A two point terminal block must be mounted on the back side of the police switch panel and the hand control circuit terminated on this block. This will be for installation of a hand control cord by others, as required.

2.11.4 Space Requirement. Adequate room must be provided in the police panel section to store the manual switch and retractable cord.

2.12 MANUAL OPERATION

2.12.1 General. The auto-hand switch must provide a means of manually timing the signals by use of a separate, momentary contact, hand switch. Operation of the timer by manual control must provide the same color sequence as an automatic operation with no momentary undesirable indications appearing. Manual control must be possible with the door of the cabinet closed. The hand switch required for manual control must only be supplied when specified in the PROPOSAL. It must be of an approved weatherproof construction with a six (6) foot, retractable, flexible, extension cord to allow connection to the appropriate terminals on the panel of the controller. It must not be possible to manually step through a vehicle clearance interval.

2.13 RELAYS

2.13.1 Transfer Relays. Six (6) double pole, double throw, flash transfer relays must be furnished with each controller. These relays must be jack mounted into an S-408-SB, or equivalent, socket mounted on the controller panel.

2.13.2 Contact Arm. Each contact arm must have over travel on the front and back contacts and be independent of any other contact arms. No adjustment of contact pressure or wipe must be necessary. Load capability must be a minimum of fifteen (15) amperes per contact continuously and thirty (30) amperes for one (1) minute. Contacts must be of coin or fine silver or an approved alternate.

2.13.3 Dust Cover. A suitable dust cover must be furnished for each relay.

2.13.4 Relay Mounting and Endurance. All relays supplied must meet their approved specified requirements and must have contacts which cannot be opened by unusual vibrations, shock, or momentary voltage excursions of up to 30%. All relays other than the flash and bus relay must be mounted on a molded base with eleven (11) or eight (8) pins for jack mounting to their respective panel or sub-base, and must be electrically interchangeable with those presently used by the City of Chicago ("MIDTEX", Model 158-92T200 or equal).

2.14 COMMUNICATIONS INTERFACE PANEL

2.14.1 Where a communications interface has been specified in the PROPOSAL or contract plans to allow a controller to function as a Master or Secondary controller, then one of the specified options must be provided:

(1) Fiber Optic Communications Interfaces must meet the following requirements:

- a. General. The fiber optic communications components must consist of, but not be limited to, an internal fiber optic modem within the controller, a fiber optic patch panel to interface the modem to field fiber optic cables, and fiber optic jumpers between the modem and patch panel.
- b. The modem in Master controllers must either be a multi-directional "star" type or a bi-directional type, as specified in the PROPOSAL or contract plans. The modem in Secondary (i.e., local) controllers must be bi-directional type. All modems must be Electronic Industries Association (EIA) compatible for RS-232 data communications via fiber optic link. Modems must be multi-mode, operate at 850nm wavelength, and provide full-duplex, frequency modulated, asynchronous transmission at data rates of up to 38.4 kbps.

- c. The fiber optic patch panel must consist of a 14" long by 5-3/4" wide by 3-1/4" high rack constructed in accordance with City of Chicago BOE Drawing No. 909. The rack must be designed to mount on the controller cabinet rails. "ST" type terminals, suitably labeled, must be provided for the connection of field fibers and Modem.
 - d. The fiber optic jumpers (i.e., optical patch cords) must consist of a single multi-mode fiber in 900 micron orange jacket, with "ST" type connectors factory installed on each end. The jumpers must be 3' long in Secondary (i.e., local) controller cabinets and 6' long in Master controller cabinets. The jumpers must be connected to the patch panel and supported in such a manner that the minimum bending radius is ten (10) times the diameter of the cable, and the cables exert no strain on the connectors. Each jumper must have a minimum tensile strength of 50 lbs.
- (2) Copper Wire Interconnect Panels (Seven Wire, VAC) must meet the following requirements:
- a. General. The interconnect panel must serve to isolate interconnect VAC from the controller. The panel must consist of, but not be limited to, seven (7) relays. Each relay interconnect circuit must include an M.O.V. properly rated for protection against lightning and switching surges injurious to the controller and a barrier type 3AG fuse receptacle and fuse not to exceed five (5) amperes. Each panel must provide a seven (7) wire interface with the T.B.C. functions described below and must provide barrier type terminals suitably labeled for these functions.
 - b. The secondary interconnect panel must be wired in such a manner that an VAC input activates a relay sending an input from that relay to the controller. It must have a minimum of seven (7) relays for the following functions; Dial 2, Dial 3, Dial 4, Offset 1, Offset 2, Offset 3, M.U.T.C.D. flash.
 - c. The master interconnect panel must provide a means to establish outgoing VAC for a seven (7) wire interconnect system using eight (8) relays. The relays must have 24 VDC coils and be designated as, Dial 2, Dial 3, Dial 4, Sync, Offset 1, Offset 2, Offset 3, M.U.T.C.D. flash. The sync relay must be wired in such a manner that it provides the offset pulse to the contacts of the three (3) Offset relays.
 - d. Each relay must be a double pole type, with one pole designated as field interconnect output, and the other designated as controller input. Relay coils must be rated for continuous duty. Relay contacts must be rated for a continuous fifteen (15) AMP resistive load.
 - e. A terminal strip must be mounted on the top of the master interconnect panel for controller interface.
 - f. The master panel must interface with the T.B.C. terminals as described above.
 - g. Each output must be fused as outlined above.

2.15 WIRING

- 2.15.1 General. All electrical conductors must be stranded copper, with a minimum of nineteen (19) strands per conductor, and a concentrically applied 90 degree C insulation with a 600 VAC rating. Wiring from the fuse block to the first distribution point, and to the controller bus, must be No. 10 AWG. Signal circuit wire must be No. 14 AWG. The wires must be provided with lugs or other approved terminal fittings for attachment to binding posts. All wiring between various parts of the controller must be neatly cabled. All wiring and terminal blocks must be tested for possible short circuits and resistance to ground by a high voltage dielectric test at 1,200 VAC. A wiring harness of adequate length must be provided to the timing device to allow the timer to be placed on top of the cabinet when required.
- 2.15.2 All VAC connections to load switches, flasher, and flash transfer relays must be soldered. All VAC connections on back of terminals must be soldered.
- 2.15.3 All VDC connections on back of terminals, and load switches must be soldered or connected with pre-approved terminations. All VDC connections to load switches are to be soldered or connected in a manner pre-approved by the City of Chicago's Bureau of Electricity.

3. TESTING REQUIREMENTS

- 3.1 General. The following test requirements must utilize, but not be limited to, the following outline:
- 3.1.1 N.E.M.A. Environmental Test. One controller, the submitted sample unless approved otherwise, must be tested, at the manufacturer's expense, in accordance with Part 2 of NEMA Standards Publication TS1-1983. All of the tests listed must be performed with all data properly recorded and certified. If the manufacturer changes the design, fabrication or components of a previously tested and approved controller, then a sample of the controller containing the new design, fabrication or components must be retested at the manufacturer's expense. Any N.E.M.A. environmental test references to minimum recall must include but not be limited to: All thirty-six (36) output circuits must be "burned in" a test prom in a sequence to simulate the normal functioning of the entire controller cabinet assembly; The conflict monitor must have a test board with the allowable channel jumpers installed to simulate normal operation; All twenty-four (24) intervals must be programmed with a minimum of two (2) seconds per interval. A copy of the test prom must be approved by the City of Chicago, Bureau of Electricity prior to testing.
- 3.1.2 Functional "Burn In" Testing. The "burn in" requirement must include a test that uses all thirty-six (36) output circuits in "solid" burn as well as 1 pps and 5 pps for each circuit. All twenty-four (24) intervals must be programmed with a minimum of two (2) seconds per interval. The test program or PROM in a sequence to simulate the normal functioning of the entire controller-cabinet assembly. A copy of the test program or PROM must be approved by the City of Chicago, Bureau of Electricity prior to testing.

- 3.1.3 Performance Testing Requirements. In addition to the NEMA environmental test and the "burn-in" requirements stated above, satisfactory performance of the traffic signal cabinet and its equipment must be demonstrated prior to shipment from the factory. The manufacturer must submit five (5) copies of his proposed "Test Procedure Document" for approval with the sample requested above. The test procedure must consist of two (2) sections; Physical inspection and functional testing. If the test procedure is judged by the Commissioner or his duly authorized representative to be incomplete, inadequate or otherwise deficient, the contractor must revise and resubmit his "test procedure document" until it is approved. No contract can be awarded until the "test procedure document" has been approved.
- 3.1.4 Performance Testing Documentation. Upon completion of the performance testing, two (2) certified copies of the final results of the approved "Test Procedure Document" must be included with all traffic signal controller production shipments.
- 3.1.5 Testing, Certification and Observation. Each traffic signal controller ordered must be tested in accordance with the approved "Test Procedure" document. The City's representative(s) must observe the manufacturer's testing in progress. The City must be notified at least thirty (30) calendar days prior to testing, and no testing will be initiated without the presence of its representative(s). The representative(s) may observe all, or a portion, of the tests, as he (they) may deem necessary. Certification documents that the traffic signal controller has been tested in accordance with the Test Procedures documents, and the results of these tests, must be signed by the individual(s) performing the tests and their immediate engineering supervisor. Two (2) copies of each certification document must be delivered with each production traffic signal controller. The contractor must include in his bid the cost of travel, food and lodging for two (2) engineers. Travel for 150 miles or greater must utilize a major airline. Lodging accommodations must be equal to those provided at a Holiday Inn.
- 3.1.6 Physical Inspection. The "physical inspection" portion of the test procedure document must require the manufacturer to perform a physical inspection of workmanship and specification compliance for each traffic signal controller assembly. The inspection must be done using a detailed check list defining items to be inspected and criteria for acceptance. The inspection must include, but not be limited to, the following items:
- (1) Hardware installation.
 - (2) Assembly mounting.
 - (3) Dimensions.
 - (4) Presence of specified devices and materials.
 - (5) Presence of required documents.
 - (6) Labeling and required serial numbers.
 - (7) Wiring including routing, covering, gauge, length, and soldering of terminations.
 - (8) Arrangement of equipment for safety and ease of calibration reprogramming troubleshooting and maintenance.
 - (9) Condition of cabinet body and finish.
 - (10) Condition and installation of doors, panels, gaskets and ventilation.
 - (11) High voltage test of insulation resistance to ground, with wires installed in cabinet and equipment disconnected.

- 3.1.7 Functional Testing. The "functional testing" portion of the Test Procedure must require the manufacturer to perform a complete room-temperature functional test of each complete traffic signal controller assembly for a minimum of seventy-two (72) hours. This test must be designed to concurrently check integrated hardware systems e.g., from simulated input to load switch output including conflict monitor and time base coordinator. All interface/controller interconnections must be tested. All load switch and interconnect relay positions must be tested, regardless of the number of load switches and interconnect relays being purchased. The functions tested must include, but not be limited to, the following:
1. Flash logic and operation (color, phases).
 2. Conflict monitor logic and operation.
 3. Police panel switch operation.
 4. Auxiliary panel switches (including fans).
 5. Interface panel.
 6. Time switch operation.
 7. Load switches (with a continuous ten (10) ampere load on each signal circuit).
 8. Outputs.
 9. Power interruptions of less than 500 ms.
 10. Power interruptions of more than 1.0 sec.

THIS SPECIFICATION MUST NOT BE ALTERED

**SPECIFICATION 1474
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
MARCH 15, 1995**

**CABLE: MULTIPLE CONDUCTOR, COPPER WIRE, 600 VOLT, ETHYLENE PROPYLENE
RUBBER INSULATION, HYPALON JACKET**

SUBJECT

This specification states the requirements for a multiple cable to be installed in underground conduits and uses to distribute electrical energy to operate automatic traffic control equipment at street intersections within the City of Chicago.

GENERAL

- (a) Specification. The cable must conform in detail to the requirements herein stated, and to the specifications and methods of test of the American Society for Testing and Materials, cited by ASTM Designation Number, in which the most recently published revision will govern.
- (b) Acceptance. Cable not conforming to this specification will not be accepted.
- (c) Reels. The cable must be shipped on non-returnable reels. No charge should be made for wood lagging.
- (d) Warranty. The manufacturer must warrant the cable to be first class material throughout. In addition to any other claims against them, if the cable is installed within six months of date of shipment, the manufacturer must replace any cable failing during normal and proper use within two years of date of installation. All replacements under this warranty must be made free of charge F.O.B. delivery point of the original contract. Lengths of cable having been replaced will become the property of and must be returned to the manufacturer F.O.B. City of Chicago.

CABLES

- (a) Construction. The cable must consist of coated conductors each concentrically encased with a "free- stripping", ethylene propylene, insulation. In two-conductor cables, the insulated and covered conductors must be parallel and not twisted, with suitable filler, as necessary, to produce a flat core of minimum practicable dimensions. In the larger count cables suitable fillers must be used to produce an essentially round cross-section. A Mylar tape must be wrapped over the conductor assembly, and a neoprene or hypalon jacket applied overall.

- (b) Outer Diameter. The maximum allowable outer diameter for round cables must be as follows:

<u>No. of Conductors</u>	<u>Outer Diameter (inches)</u>
Seven	0.65
Ten	0.80
Fourteen	0.85
Nineteen	0.95
Twenty Two	1.10

- (c) Sealing. Both ends of each length of cable must be thoroughly sealed to prevent the entrance of moisture and other foreign matter.

COLOR CODE

Conductor identification must be provided by color synthetic-resin coverings, or an approved equal. Table A sets forth the color code for the various conductor arrangements.

CONDUCTOR

- (a) Material. Round, soft or annealed, copper wire.
- (b) Size. Cables must be made up of conductor sizes as set forth in Table A above. The Number 6 AWG conductors must be seven (7) strand, and the Number 10 AWG conductors must be solid.

INSULATION

- (a) Type. The insulation must be an ethylene propylene compound meeting the physical and electrical requirements herein specified when tested in accordance with ASTM D-470-81.
- (b) Thickness. The insulation must be circular in cross-section and have the following minimum thicknesses.

<u>Conductor Size. AWG</u>	<u>Stranding (No. Of Wires)</u>	<u>No. of Conductors</u>	<u>Insulation Thickness (mils)</u>
#4	7	2	45
#6	7	2	45
#10	1	2	25
#12	1	7	25
#12	1	10	25
#12	1	14	25
#12	1	19	25
#12	1	22	25

- (c) Physical Properties. Initial Value.
Tensile Strength 1200 psi minimum
Elongation at Rupture.....250% minimum
- (d) Physical Properties. After Aging.
- (1) After 168 hours in air oven at 121 degrees C:
Tensile Strength..... 75% of initial value
Elongation..... 75% of initial value
- (e) Accelerated Water Absorption Characteristics. Test must be made in accordance with methods discussed ASTM D470.
- (1) Gravimetric Method. The insulation must not absorb more than five (5) milligrams of water per square inch of exposed surface area after immersion in distilled water at 70 degrees C for a period of seven (7) days.
- (f) Cold-Bend Test Requirements. The completed cable must pass the “Cold” B end, Long-Time Voltage Test on Short Specimens” of ASTM D470 except that the test temperature must be minus (-) 25°C.
- (g) Electrical Requirements.
- (1) Voltage Test. The completed cable must meet an A.C. and D.C. voltage test in accordance with ASTM D470 and D2655.
- (2) Insulation Resistance. The completed cable must have an insulation resistance constant of not less than 20,000 when tested in accordance with methods shown in ASTM D470.

CABLE TAPE

The assembled and cabled conductor core must be wrapped with a one mil (0.001 inch) thick Mylar tape allowing a minimum of ten percent (10%) overlap.

JACKET

- (a) Material. The jacket must be heavy duty neoprene or hypalon (Chlorosulfonated Polyethylene) meeting the Physical and electrical requirements specified herein.
- (b) Workmanship. The jacket must have a smooth exterior surface free from holes, cracks and splits, and must be tough, elastic, homogeneous in composition, and properly vulcanized.
- (c) Thickness. Average thicknesses of the jacket must be not less than that given below. Minimum thickness must be not less than ninety percent (90%) of the average thickness.

(1) Two-Conductor No. 4 AWG	5/64 inch
(2) Two-Conductor No. 6 AWG	5/64 inch
(3) Two-Conductor No. 10 AWG	4/64 inch
(4) Seven-Conductor	3/64 inch
(5) Ten-Conductor	4/64 inch
(6) Fourteen-Conductor	4/64 inch
(7) Nineteen-Conductor	4/64 inch
(8) Twenty-Two Conductor	5/64 inch
- (d) Initial Physical Requirements:
 - 1. Tensile strength minimum PSI..... 1800
 - 2. Elongation at rupture, minimum percent 300
- (e) Air Oven Exposure Test. After conditioning in an air oven at $121^{\circ} \pm 10^{\circ}$ C for 168 hours:
 - 1. Tensile strength minimum percent of unaged value 75
 - 2. Elongation at rupture, minimum percent of unaged value 65
- (f) Mechanical Water Absorption. After 168 hours at $70^{\circ} \pm 1^{\circ}$ C:
 - 1. Milligrams per square inch, maximum
- (g) Cable Marking. Outer Jacket must be embossed or printed with the manufacturer's name, year of manufacture, insulation and jacket materials, conductor number, conductor size, at approximately 18" intervals. On the side opposite, the cable must be sequentially marked in one (1) foot increments.

TESTING

- (a) General. Tests must be performed on insulation, jacket and completed cables in accordance with applicable standards as listed in these specifications. Where standards are at variance with each other or with other portions of this specification, the most stringent requirements, as determined by an engineer from the Bureau of Electricity, will apply.
- (b) Number of Tests. Insulation and jacket tests must be conducted on samples taken every 25,000 feet or fraction thereof of each conductor size. In no case must samples be taken closer than 15,000 feet apart.

- (c) Witness Tests. Where the quantity of cable on a single purchase order is 250,000 feet or more, all insulation and jacket tests must be witnessed by an engineer from the Bureau of Electricity. In addition to these tests, the engineer must also witness tests on completed cables for approximately five percent (5%) of the cable. Included in these tests will be a 70,000 BTU per hour flame tests in accordance with IEEE 383. Reels to be tested will be selected at random by the engineer. The contractor must include in his bid, the cost of travel, food and lodging for one (1) engineer. Travel for 150 miles or greater must utilize a major airline. Lodging accommodations must be equal to those provided at a Holiday Inn. The engineer must be given ten (10) working days notice of all travel arrangements.
- (d) Test Reports. No cable may be shipped until certified copies of all factory tests, including witness tests where applicable, have been reviewed and approved by the engineer.
- (e) Acceptance. Where the cable fails to conform to any of the tests specified herein, the following must apply:
 - (1) Insulation or Jacket Tests. Samples must be taken from each reel and must successfully conform to all tests specified herein. Reels from which samples fail to conform, will be rejected.
 - (2) Completed Cable (Reel) Tests. Any reel which fails to conform to testing will be rejected. Where a reel fails during witness testing, the engineer will select five (5) additional reels to witness test.
 - (3) Where five percent (5%) or more of the reels are rejected for any reason, the entire cable order will be rejected.

PACKAGING

- (a) Reels. The completed cable must be delivered on sound substantial, nonreturnable reels. Both ends of each length of cable must be properly sealed against the entrance of moisture and other foreign matter by the use of clamp-on cable caps, such as the Reliable Electric Company neoprene cable cap No. 1405, or equal. The ends must be securely fastened so as not to become loose in transit. Before shipment, complete 2 x 4 lagging must be applied to all reels.
- (b) Footage. Each reel must contain the length of cable as set forth below. A tolerance limit of plus or minus five percent ($\pm 5\%$) must be adhered to.
 - (1) Two-Conductor 2000 feet
 - (2) Seven-Conductor 2000 feet
 - (3) Ten-Conductor 2000 feet
 - (4) Fourteen-Conductor 2000 feet
 - (5) Nineteen-Conductor 1000 feet
 - (6) Twenty-two Conductor 1000 feet

(c) Marking. A metal tag must be securely attached to each reel indicating the reel number, contract number, date of shipment, gross and tare weights, the appropriate City commodity Code Number as set forth below, and a description of the cable. Also, each reel must have permanent marking on it indicating directions for unrolling the cable and the footage of cable contained in the reel. Indelible ink or other such material susceptible to washing off or fading will not be permitted; and approved permanent marking material such as paint or a securely attached metal tag is required.

(d) Commodity Code Number.

(1) Two-conductor No. 4 AWG	31-4686-5826
(2) Two-Conductor No. 6 AWG	31-4686-5808
(3) Two-Conductor No. 10 AWG	31-4686-5510
(4) Seven-Conductor	31-4682-5620
(5) Ten-Conductor	31-4682-5630
(6) Fourteen-Conductor	31-4682-5640
(7) Nineteen-Conductor	31-4682-5645
(8) Twenty-two Conductor	31-4682-5650

TABLE A COLOR CODE CONDUCTOR IDENTIFICATION

Base Color	First Tracer	Second Tracer	2 (# 6)	2 (# 4)	7	10	14	19	22
White	Black	Red	--	--	--	--	--	12	12
White	Red	Green	--	--	--	--	--	12	12
Black	--	--	6	4	12	12	12	12	12
White	--	--	6	4	12	12	12	12	12
Red	--	--	--	--	12	12	12	12	12
Green	--	--	--	--	12	12	12	12	12
Orange	--	--	--	--	12	12	12	12	12
Blue	--	--	--	--	12	--	12	12	12
White	Black	--	--	--	12	--	--	--	12
Red	Black	--	--	--	--	12	12	12	12
Green	Black	--	--	--	12	12	12	12	12
Orange	Black	--	--	--	--	12	12	12	12
Blue	Black	--	--	--	--	12	--	--	--
Black	White	--	--	--	--	--	--	--	12
Red	White	--	--	--	--	--	12	12	12
Green	White	--	--	--	--	--	12	12	12

THIS SPECIFICATION MUST NOT BE ALTERED

SPECIFICATION 1482
BUREAU OF ELECTRICITY
DEPARTMENT OF STREETS AND SANITATION
CITY OF CHICAGO
MARCH 20, 1997

CABLE: TELECOMMUNICATIONS
HYBRID FIBER OPTIC

MATERIALS

1. (a) Hybrid fiber optic cable
The cable must meet, as a minimum, the following specifications and conform with the latest issue of Bellcore TR-TSY-00020: Generic requirement for Optical Fiber and Optical Fiber Cables, ANSI/EIA-472: Generic Specification of Fiber Optic Cables, and REA-PE-90; and appropriate Sectional Specifications thereof.
- (b) Cable Construction
Cable construction, other than as specified, must be approved by the ENGINEER.
 1. The cable must be constructed entirely from dielectric material.
 2. A cable suitable for either direct installation into a duct bank or conduit must be supplied.
 3. The cable must be of gel-filled, loose tube construction with up to 12 buffer tubes wrapped around a dielectric central strength member. All fiber(s) must be contained within buffer tubes, and each buffer tube must have an inside diameter much greater than the total diameter(s) of the fibers(s) it supports.
 4. Each fiber or group of fibers must be free-floating within the tubes such that all mechanically or environmentally induced stress placed upon the cable is de-coupled from the fibers. The air within the buffer tubes must be displaced with a gel to prevent entry by water and to facilitate free movement of the fibers(s) within.
 5. The buffer tubes must be color coded in compliance with EIA/TIA-598; Color Coding of Fiber Optic Cables.
 6. Cables constructed of less than six fibers must have a buffer tube provided for each fiber: cables constructed of more than six fibers may have several fibers occupy a buffer tube, with equal distribution of fibers as far as practicable. All fibers must be color coded in compliance with EIA/TIA-598: Color Coding of Fiber Optic Cables. Single-mode and multimode fibers must not occupy the same buffer tube.

7. In buffer tubes containing multiple fibers, the colors must be stable during temperature cycling and not subject to fading or smearing onto each other or into the gel filling material. Colors must not cause fibers to stick together.
8. The cable must have an interstitial filing between the buffer tubes and throughout the remainder of the cable to prevent entry of water.
9. A binder wrapping strength member of aramid fibers must be provided as a final layer prior to application of the outer jacket.
10. The cable must be provided in continuous lengths. Each fiber must be pulled from the same optical waveguide form and must be free of splices. Each optical fiber must consist of a doped silica core surrounded by a concentric silical cladding; the use of any other material must be approved by the CITY.
11. A permanent marking must be employed on the outer jacket of the cable which must show the date of manufacture and the manufacturer's name. A numerical sequence must be marked on the outer jacket, at intervals no greater than ten (10) feet to facilitate determination of length of cable and amount of cable remaining on the reel. The height of the marking must be 2.5 mm nominal.
12. All optical fibers must be 100% attenuation tested at the factory for compliance with performance specifications described herein. The attenuation of each fiber must be provided with each cable reel.
13. The outer jacket must be constructed of medium density polyethylene, minimum jacket thickness of 1.4 mm. Jacketing material must be applied directly over the tensile strength members and flooding compound. The outer jacket must be UV and fungus resistant.

(c) Single Mode Optical Specifications

Optical Wavelength	1,300nm and 1.550 nm
Optical Attenuation	@ 1,300 nm: 0.7 dB/km @ 20 C @ 1,550 nm: 0.6 dB/km @ 20 C
Optical Dispersion	@ 1,300 nm: 3.5-4.5 psec/nm-km @ 1,550 nm:(\leq) 20 psec/nm-km
Zero-Dispersion Wavelength	1300 to 1320 nm, nominal
Zero Dispersion Slope	\leq 0.092 ps/nm ² -km
Fiber Core Diameter	8.3 um, typical
Fiber Coating Diameter	250+/-10 um
Fiber Cladding Diameter	125+/-2 um
Core to Cladding Offset	\leq 1.8 um
Cladding Non-Circularity	\leq 1.0%

Spot Size	9.3+/-0.5 UM @ 1300 nm 10.5+/-1 UM @ 1550 nm
Cutoff Wavelength	<=1250 nm
(d) <u>Multimode Optical Specifications</u>	
Operational Wavelength	850 nm and 1,300 nm
Optical Attenuation	
@850 nm:	400 MHZ-km @ 20 C
@ 1,300 nm:	400 MHZ-km @ 20 C
Fiber Core Diameter	62.5 um +/-3.0 um
Fiber Coating Diameter	250 +/-15 um
Fiber Cladding Diameter	125 +/-2.0 um
Core to Cladding offset	<=3.0 um
Cladding Non-Circularity	<=6.0%
Numerical Aperture	0.275+/-0.015
Index	Graded Index
(e) <u>Hybrid Cable Mechanical Specifications</u>	
Crush Resistance	5,000 N/m. length of cable
Cable Outside Diameter	0.50' nominal
Minimum Bending Radius:	
Installation	20 times the cable diameter
Static	10 times the cable diameter
Temperature:	
Installation	-30 C to + 70 C
Storage/Operation	-40 C to + 70 C
Humidity	0 to 100%
Tensil Strength:	
Installation	2,700 N (600 ibf)
Static	600 N (125 ibf)

FIBER OPTIC PIGTAILS

2. The optical pigtail provided under this Contract must consist of multiple fibers, factory connectorized on one end, suitable for installation in an outdoor duct run. Each fiber must be individually jacketed, with aramid yarn fibers between the fiber and the sub-jacket. The fibers must then be contained in a medium density polyethylene outer jacket. The multi-fiber pigtail must be provided in eight (8) multimode fibers/configuration.

The factory installed ST connectors furnished as part of pigtails must meet or exceed the requirements for approval connectors specified herein. There must be a S-T type connector installed on all eight (8) multi-mode Fiber Optic Pigtails will be determined on Sub-orders placed.

The cable must be suitable for installation in outdoor manholes with water and/or ice.

Each jacketed fiber must have a tensile strength in excess of 50 lbs.

CONCRETE ADMIXTURES (BDE)

Effective: January 1, 2003

Revised: July 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

- “(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. Other admixtures may be used when approved by the Engineer, or if specified by the contract. If an accelerating admixture is permitted by the Engineer, it shall be the non-chloride type.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture. An accelerator shall not be used. For stationary or truck mixed concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use a mobile portland cement concrete plant according to Article 1103.04, but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP.”

Revise Section 1021 of the Standard Specifications to read:

“SECTION 1021. CONCRETE ADMIXTURES”

1021.01 General. Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. Containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. Per the manufacturer's option, the cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

In addition to the report, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The test and reference concrete mixture shall contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by the AASHTO Accreditation Program.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161, Procedure B.

The manufacturer shall include in the submittal the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory accredited by the AASHTO Accreditation Program.

All admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass (weight).

1021.02 Air-Entraining Admixtures. Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

1021.03 Retarding and Water-Reducing Admixtures. The admixture shall comply with the following requirements:

- (a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).
- (b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.
- (c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.) prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

1021.04 Set Accelerating Admixtures. The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)”

80094

FLAGGER VESTS (BDE)

Effective: April 1, 2003

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

“The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e).”

Revise Article 701.04(c)(6) of the Standard Specifications to read:

“(6) Nighttime Flagging. The flagger station shall be lit by additional overhead lighting other than streetlights. The flagger shall be equipped with a fluorescent orange or fluorescent orange and fluorescent yellow/green garment meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments.”

80101

MINIMUM LANE WIDTH WITH LANE CLOSURE (BDE)

Effective: January 1, 2005

Add the following paragraph after the eighth paragraph of Article 701.04(a) of the Standard Specifications.

“The minimum lane width adjacent to a closed lane during paving, patching, and other moving operations on freeways and expressways shall be a minimum of 3 m (10 ft). The 3 m (10 ft) shall be clear, unobstructed, and free of channelizing devices or other obstacles.”

80137

PARTIAL PAYMENTS (BDE)

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

“**109.07 Partial Payments.** Partial payments will be made as follows:

- (a) Progress Payments. At least once each month, the Engineer will make a written estimate of the amount of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

- (b) Material Allowances. At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.), documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds \$10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under \$500,000, the minimum \$10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

80116

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: June 1, 2000

Revised: September 1, 2003

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts no later than 30 days from the receipt of each payment made to the Contractor.

State law addresses the timing of payments to be made to subcontractors. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, generally requires that when a Contractor receives any payment from the Department, the Contractor is required to make corresponding, proportional payments to each subcontractor performing work within 15 calendar days after receipt of the state payment. Section 7 of the State Prompt Payment Act further provides that interest in the amount of 2% per month, in addition to the payment due, shall be paid to any subcontractor by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

As progress payments are made to the Contractor in accordance with Article 109.07 of the Standard Specifications for Road and Bridge Construction, the Contractor shall make a corresponding partial payment within 15 calendar days to each subcontractor in proportion to the work satisfactorily completed by each subcontractor. The proportionate amount of partial payment due to each subcontractor shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors shall be paid in full within 15 calendar days after the subcontractor's work has been satisfactorily completed. The Contractor shall hold no retainage from the subcontractors.

This Special Provision does not create any rights in favor of any subcontractor against the State of Illinois or authorize any cause of action against the State of Illinois on account of any payment, nonpayment, delayed payment or interest claimed by application of the State Prompt Payment Act. The Department will neither determine the reasonableness of any cause for delay of payment nor enforce any claim to payment, including interest. Moreover, the Department will not approve any delay or postponement of the 15 day requirement. State law creates remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond in accordance with the Public Construction Bond Act, 30 ILCS 550.

80022

PERSONAL PROTECTIVE EQUIPMENT (BDE)

Effective: July 1, 2004

All personnel, excluding flaggers, working outside of a vehicle (car or truck) within 7.6 m (25 ft) of pavement open to traffic shall wear a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have manufacturers tags identifying them as meeting the ANSI Class 2 requirement.

80130

PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)

Effective: November 1, 1993

Revised: April 2, 2004

Description. This work shall consist of furnishing, placing, and maintaining changeable message sign(s) at the locations(s) shown on the plans or as directed by the Engineer.

The sign(s) shall be trailer mounted. The message panel shall be at least 2.1 m (7 ft) above the pavement, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time. Character height shall be 450 mm (18 in.).

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash any six messages in sequence. The message panel shall also be capable of being controlled by a computer from a remote location via a cellular linkage. The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designated by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 400 m (1/4 mile) under both day and night conditions. The letters shall be legible from 250 m (750 ft).

The sign shall include automatic dimming for nighttime operation and a power supply capable of providing 24 hours of uninterrupted service.

The Contractor shall provide all preventive maintenance efforts s(he) deems necessary to achieve uninterrupted service. If service is interrupted for any cause and not restored within 24 hours, the Engineer will cause such work to be performed as may be necessary to provide this service. The cost of such work shall be borne by the Contractor or deducted from current or future compensation due the Contractor.

When the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

Basis of Payment. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

For all other portable changeable message signs, this work will be paid for at the contract unit price per calendar month for each sign as CHANGEABLE MESSAGE SIGN.

80124

PORTLAND CEMENT (BDE)

Effective: January 1, 2005

Replace the first sentence of the second paragraph of Article 1001.01 of the Standard Specifications with the following:

“For portland cement according to ASTM C 150, the addition of up to 5.0 percent limestone by mass (weight) to the cement will not be permitted. Also, the total of all organic processing additions shall not exceed 1.0 percent by mass (weight) of the cement and the total of all inorganic processing additions shall not exceed 4.0 percent by mass (weight) of the cement.”

80139

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

“The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

“The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

“The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

“The plant shall be approved before production begins according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

80083

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 1992

Revised: January 1, 2005

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

A deficiency may be any lack of repair, maintenance, or non-compliance with the traffic control plan. A deficiency may also be applied to situations where corrective action is not an option such as the use of non-certified flaggers for short term operations; working with lane closures beyond the time allowed in the contract; or failure to perform required contract obligations such as traffic control surveillance.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1,000 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option this monetary deduction will be immediate.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

5729I

TRAFFIC STRUCTURES (BDE)

Effective: November 1, 2002

Add the following sentence to the end of the first paragraph of Article 1069.01(a)(1) of the Standard Specifications:

“Light poles shall be designed for 145 km/hr (90 mph) wind velocity and a minimum design life of 50 years.”

Add the following sentence to the end of the third paragraph of Article 1069.04(a) of the Standard Specifications:

“Light towers shall be designed for 145 km/hr (90 mph) wind velocity and a minimum design life of 50 years.”

Revise the last sentence of the first paragraph of Article 1077.03(a)(1) of the Standard Specifications to read:

“The design shall be according to AASHTO “Standard Specification for Structural Supports for Highway Signs, Luminaries and Traffic Signals” 1994 Edition for 130 km/hr (80 mph) wind velocity. However the arm-to-pole connection shall be according to the “ring plate” detail as shown in Figure 11-1(f) of the 2002 Interim, to the AASHTO “Standard Specification for Structural Supports for Highway Signs, Luminaries and Traffic Signals” 2001 4th Edition.”

| 80088

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

| Effective: January 1, 2003

Revised: November 1, 2004

Add the following to Article 702.01 of the Standard Specifications:

“All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for either Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical barricades may be used in lieu of cones, drums or Type II barricades to channelize traffic."

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

"When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

80097

CONTRACTOR'S DAILY WORK SCHEDULE

Description:

The Contractor shall submit a daily work schedule to the Resident Engineer for the purpose of coordinating the Contractor's activities for the next working day. The daily schedule must be submitted by 3:00 pm the day before. This schedule is necessary for the Engineer to schedule inspection, testing and layout checking for the following day.

The schedule shall include the location and type of all work to be performed that day and all material deliveries. It shall identify all concrete pours, the concrete mix design numbers, and estimated number of cubic yards. The placement of bituminous materials shall be identified, including the mix design numbers, location and number of estimated tons to be placed. The Contractor shall identify all locations where survey verification is required and shall give sufficient advance notification to the Engineer so as not to cause delay.

Method of Measurement:

This coordination work will not be measured for payment.

Basis of Payment:

Preparation and submittal of the Contractor's Daily Work Schedule shall not be paid for separately, but shall be included in the cost of the contract items of work.

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: January 2, 2005

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting in accordance with Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

80143

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004

Revised: July 1, 2004

Description. At the bidder's option, a steel cost adjustment will be made to provide additional compensation to the Contractor or a credit to the Department for fluctuations in steel prices. The bidder must indicate on the attached form whether or not steel cost adjustments will be part of this contract. This attached form shall be submitted with the bid. Failure to submit the form shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of \$10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) Evidence that increased or decreased steel costs have been passed on to the Contractor.
- (b) The dates and quantity of steel, in kg (lb), shipped from the mill to the fabricator.
- (c) The quantity of steel, in kg (lb), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in kg (lb)
D = price factor, in dollars per kg (lb)

$$D = CBP_M - CBP_L$$

Where: CBP_M = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per kg (lb).

CBP_L = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the AMM for the day the contract is let. The indices will be converted from dollars per ton to dollars per kg (lb).

The unit masses (weights) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the CBP_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the CBP_L and CBP_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(CBP_L - CBP_M) \div CBP_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the steel items are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

FAI ROUTE 90/94 (DAN RYAN EXPRESSWAY)
SECTION: 2004-064TS
COOK COUNTY

Attachment

Item	Unit Mass (Weight)
Metal Piling (excluding temporary sheet piling)	
Furnishing Metal Pile Shells 305 mm (12 in.), 3.80 mm (0.179 in.) wall thickness)	34 kg/m (23 lb/ft)
Furnishing Metal Pile Shells 305 mm (12 in.), 6.35 mm (0.250 in.) wall thickness)	48 kg/m (32 lb/ft)
Furnishing Metal Pile Shells 356 mm (14 in.), 6.35 mm (0.250 in.) wall thickness)	55 kg/m (37 lb/ft)
Other piling	See plans
Structural Steel	See plans for weights
Reinforcing Steel	See plans for weights
Dowel Bars and Tie Bars	3 kg (6 lb) each
Mesh Reinforcement	310 kg/sq m (63 lb/100 sq ft)
Guardrail	
Steel Plate Beam Guardrail, Type A w/steel posts	30 kg/m (20 lb/ft)
Steel Plate Beam Guardrail, Type B w/steel posts	45 kg/m (30 lb/ft)
Steel Plate Beam Guardrail, Types A and B w/wood posts	12 kg/m (8 lb/ft)
Steel Plate Beam Guardrail, Type 2	140 kg (305 lb) each
Steel Plate Beam Guardrail, Type 6	570 kg (1260 lb) each
Traffic Barrier Terminal, Type 1 Special (Tangent)	330 kg (730 lb) each
Traffic Barrier Terminal, Type 1 Special (Flared)	185 kg (410 lb) each
Steel Traffic Signal and Light Poles, Towers and Mast Arms	
Traffic Signal Post	16 kg/m (11 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 9 m – 12 m (30 - 40 ft)	21 kg/m (14 lb/ft)
Light Pole, Tenon Mount and Twin Mount, 13.5 m – 16.5 m (45 - 55 ft)	31 kg/m (21 lb/ft)
Light Pole w/Mast Arm, 9 m – 15.2 m (30 - 50 ft)	19 kg/m (13 lb/ft)
Light Pole w/Mast Arm, 16.5 m – 18 m (55 - 60 ft)	28 kg/m (19 lb/ft)
Light Tower w/Luminaire Mount, 24 m – 33.5 m (80 - 110 ft)	46 kg/m (31 lb/ft)
Light Tower w/Luminaire Mount, 36.5 m – 42.5 m (120 - 140 ft)	97 kg/m (65 lb/ft)
Light Tower w/Luminaire Mount, 45.5 m – 48.5 m (150 - 160 ft)	119 kg/m (80 lb/ft)
Metal Railings (excluding wire fence)	
Steel Railing, Type SM	95 kg/m (64 lb/ft)
Steel Railing, Type S-1	58 kg/m (39 lb/ft)
Steel Railing, Type T-1	79 kg/m (53 lb/ft)
Steel Bridge Rail	77 kg/m (52 lb/ft)
Frames and Grates	
Frame	115 kg (250 lb)
Lids and Grates	70 kg (150 lb)

RETURN WITH BID

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**OPTION FOR
STEEL COST ADJUSTMENT**

The bidder shall submit this form with his/her bid. Failure to submit the form shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

Contract No.: _____

Company Name: _____

Contractor's Option:

Is your company opting to include this special provision as part of the contract plans?

Yes No

Signature: _____ **Date:** _____

80127

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

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ATTACHMENTS

- A. Employment Preference for Appalachian Contracts
(included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

- Section I, paragraph 2;
- Section IV, paragraphs 1, 2, 3, 4 and 7;
- Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

- a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
- b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60 (and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above

agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any

evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to

the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quailifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the

contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or

disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advised the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not

listed on the wage determination unless the Administrator of the

be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits

Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall, upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan

or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period).

The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V.

This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for

inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

- a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
- b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
- c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

- a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.
- b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a

whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of

any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled

"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at <http://www.dot.il.gov/desenv/delett.html>.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at <http://www.dot.il.gov/desenv/subsc.html>.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.